



3 1761 05690175 4

UD

234

A57

1926

v.2

Use

SHAVALLO

"The Better British Shaving Soap."

Made
Reput
efficient
giving
not d
stiffes
and re

SHAV
ivorin
tinfoil
the te

By
Apri

Establi



Presented to the
LIBRARY *of the*
UNIVERSITY OF TORONTO
by
ESTATE OF THE LATE
PROFESSOR J.R.
COCKBURN



OFFICERS' UNIFORM

We specialise in the production of Uniform for all British Regiments. Having made a close study of Military Outfitting in all its branches for more than fifty years, we are conversant with all the Regulations, and Officers may rely upon our understanding their requirements to a nicety.

We are always pleased to submit estimates with the utmost promptitude.

Wm. ANDERSON & SONS,

Military Outfitters,

LTD.

14 & 16, George St.,
Edinburgh.

157, Hope St.,
Glasgow.



“ERASMIC” SHAVING STICK.

[T is *not possible* to buy better than the best. There can be none better than the “Erasmic” Shaving Stick, because it is better than the best of all other makes and has always been advertised as “British and Best.”

A CHALLENGE.

There is nothing so convincing as facts. If you will take a stick of “Erasmic” Shaving Soap and test it along with any other make—foreign or British—in water of equal hardness and temperature, you will be convinced that Erasmic is the best, and that there is no Shaving Stick to compare with “Erasmic.”

Its emollient properties are marvellous, its lathering power is extraordinary, and it will not dry on the face.

ERASMIC, *Perfumers*, LONDON.

INFANTRY TRAINING

is based on long experience.

150 years' spinning experience made "Viyella" Fine Twill Flannel possible, and the experience of hundreds of thousands of Officers, before, during, and since the Great War, is that

"Viyella"

(Regd)

GUARANTEED UNSHRINKABLE
Shirts and Pyjamas

are without equal for service in any part of the world, being light yet protective, comfortable, healthful, smart and wonderfully durable.

Hundreds of patterns, including several khakis.

FROM
FIRST-CLASS
OUTFITTERS
THE WORLD
OVER.



*If any difficulty, please write Wm. Hollins & Co., Ltd.,
324, Viyella House, Newgate Street, London, E.C.1.*



An Important Feature
of
INFANTRY TRAINING

is
the knowledge that
Navy Army & Air Force Institutes
is
THE SERVICES OWN BUSINESS

Belonging to them
Controlled by them
Aiming solely at the promotion of their
interests.

Without Shareholders
Without Dividends

But paying substantial rebate on all
purchases, and securing all ultimate
profits for the benefit of

THE SERVICES.

Address enquiries to Headquarters,
IMPERIAL COURT, UPPER KENNINGTON LANE, S.E.11



For
Theatre Tickets
Go to

KEITH PROWSE

As soon as a production or event is announced Keith Prowse reserve *whole blocks* of seats in the *best* Positions on *all* bookable parts for *all* performances. These seats are reserved *exclusively* for patrons of Keith Prowse and cannot be obtained elsewhere.

YOU want Best Seats
WE have them

The Keith Prowse Service extends to everything that is bookable, including: Theatres, Music Halls, Concerts, Cabarets, Shows, Tournaments, Races, Sports, &c. We have also a Special Department for the Hiring of Motor Cars for the Theatre and all occasions. Motor Coaches, River Launches, &c., also for the booking of Railway Tickets and Aerial Flights.

Wire, write, 'phone or call

KEITH PROWSE & Co., Ltd.,
159, New Bond Street, London, W.1 (Regent 6000).
48, Cheapside, E.C.2 (City 473) and Branches.

YOU USE METAL POLISH— WHY NOT THE BEST?

THERE IS
ONLY ONE

GLITTERIT



The name implies what it will do — GLITTER - IT. The quality supersedes all others. It is clean and economical in use, quick-drying, non-greasy, and gives a brilliant and lasting lustre, under all atmospheric conditions, to Silver Plate, Nickel, Brass, Steel, Copper, Aluminium, Celluloid, Glass, etc.

“GLITTERIT,” although superior in every respect to other Metal Polishes, is entirely a British Product.

Every Officer and N.C.O. will confer a favour on his men by making “Glitterit” known to them.

Mfrs.: The “Glitterit” Polish Co., 81, Rosebery Ave., E. C. 1

[Issued with Army Orders for February, 1926]

[Crown Copyright Reserved]

G. B.

26
Publications
153



INFANTRY TRAINING

Vol. II

WAR

1926

LONDON

PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE.

Sole purchased directly from H.M. STATIONERY OFFICE at the following addresses
Adastral House, Kingsway London. W.C. 2: 28, Abingdon Street, London, S.W. 1;
York Street Manchester: 1, St. Andrew's Crescent, Cardiff;
or 120, George Street, Edinburgh;
or through any Bookseller.

1926

Price 9d. Net.

UD
234
A57
1926
v. 2

By Command of the Army Council,

H. J. Creedy

THE WAR OFFICE,

26th January, 1923

1047947

[Notified in Army Orders, January, 1929.]

INFANTRY TRAINING VOL. I, 1926.

AMENDMENTS (No. 2).

26
Manuals
659

1. General.

NOTE TO BE PASTED INSIDE COVER.

The war organization of a battalion as described in Sec. 2. 2, is now obsolete, as far as the Regular Army is concerned.

Amdt. 2
Jan. 1929

The new Regular Army organization is as follows :—

i. A battalion consists of :—

Headquarter wing,
Machine-gun company,
Three rifle companies.

The four companies of a battalion are designated by serial letters. In order to distinguish the machine-gun company the symbol " (MG) " will be inserted between the letter allotted to the machine-gun company and the word " company,"
e.g. D (MG) Company.

ii. The headquarter wing consists of :—

No. 1 Group.—Battalion headquarters, signallers, intelligence section, clerks, stretcher bearers, batmen and orderlies.

No. 2 Group.—Anti-tank group with 4 anti-tank guns.

No. 3 Group.—Personnel employed primarily in administrative duties but available for fighting in emergency, 2 anti-aircraft Lewis guns and regimental transport.

iii. The machine-gun company consists of :—

Company headquarters,

4 machine-gun platoons, each of 4 machine guns.

A machine-gun platoon consists of :—

2 machine-gun sections, each of 2 machine guns.

A machine-gun section comprises 2 machine-gun subsections, each of 1 machine gun.

iv. The rifle company, platoon and section remain as described in Sec. 2, 2, iii, iv, and v.

As a result of the introduction of the above organization a number of detailed amendments will be necessary and these will be incorporated in the next edition of this manual.

In the meantime the general principles and system of training laid down in Chapter I will, with minor alterations, still hold good, and are to be studied in conjunction with the instructions contained in Machine Gun Training.

Machine-gun companies will parade for ceremonial purposes as rifle companies ; the drill chapters of this volume will therefore still be largely applicable.

2. Page xii. Contents.—*Insert* :—

" 190A. Parade to celebrate the birthday of His Majesty the King, when His Majesty is not present 251

Amdt. 2
Jan. 1929

3. Page 57. Section 23, paragraph 1, lines 6 to 8.—
Delete from " , so " in line 6 to " rear " in line 8.4. Page 97. Section 64, line 1.—*After* " Rifle " *insert*
" and English light infantry ".5. Page 228. Section 165, paragraph 1, line 5.—*For*
" colour party " *substitute*
" officers carrying the colours ".6. Page 229. Section 165, paragraph iii, as amended by
Amendment No. 1, notified in Army Order 22 of 1928,
line 4.—*For* " colour party " *substitute*
" officers carrying the colours ".7. Page 251.—*Add* new Section :—

" 190A. Parade to celebrate the birthday of His Majesty the King, when His Majesty is not present

Amdt. 2
Jan. 1929

When a parade is held to commemorate His Majesty's birthday the following procedure will be adopted :—

- i. The commander will be received with a general salute.
- ii. The troops will march past and reform line.
- iii. The commander and staff will take post as laid down for the review of their unit or formation. As the commander leaves the saluting point, the Royal Standard (if available) will be hoisted in replacement of the flag flown during the march past.

The first of these is the fact that the
and the second is the fact that the
and the third is the fact that the
and the fourth is the fact that the
and the fifth is the fact that the
and the sixth is the fact that the
and the seventh is the fact that the
and the eighth is the fact that the
and the ninth is the fact that the
and the tenth is the fact that the
and the eleventh is the fact that the
and the twelfth is the fact that the
and the thirteenth is the fact that the
and the fourteenth is the fact that the
and the fifteenth is the fact that the
and the sixteenth is the fact that the
and the seventeenth is the fact that the
and the eighteenth is the fact that the
and the nineteenth is the fact that the
and the twentieth is the fact that the
and the twenty-first is the fact that the
and the twenty-second is the fact that the
and the twenty-third is the fact that the
and the twenty-fourth is the fact that the
and the twenty-fifth is the fact that the
and the twenty-sixth is the fact that the
and the twenty-seventh is the fact that the
and the twenty-eighth is the fact that the
and the twenty-ninth is the fact that the
and the thirtieth is the fact that the
and the thirty-first is the fact that the
and the thirty-second is the fact that the
and the thirty-third is the fact that the
and the thirty-fourth is the fact that the
and the thirty-fifth is the fact that the
and the thirty-sixth is the fact that the
and the thirty-seventh is the fact that the
and the thirty-eighth is the fact that the
and the thirty-ninth is the fact that the
and the fortieth is the fact that the
and the forty-first is the fact that the
and the forty-second is the fact that the
and the forty-third is the fact that the
and the forty-fourth is the fact that the
and the forty-fifth is the fact that the
and the forty-sixth is the fact that the
and the forty-seventh is the fact that the
and the forty-eighth is the fact that the
and the forty-ninth is the fact that the
and the fiftieth is the fact that the
and the fifty-first is the fact that the
and the fifty-second is the fact that the
and the fifty-third is the fact that the
and the fifty-fourth is the fact that the
and the fifty-fifth is the fact that the
and the fifty-sixth is the fact that the
and the fifty-seventh is the fact that the
and the fifty-eighth is the fact that the
and the fifty-ninth is the fact that the
and the sixtieth is the fact that the
and the sixty-first is the fact that the
and the sixty-second is the fact that the
and the sixty-third is the fact that the
and the sixty-fourth is the fact that the
and the sixty-fifth is the fact that the
and the sixty-sixth is the fact that the
and the sixty-seventh is the fact that the
and the sixty-eighth is the fact that the
and the sixty-ninth is the fact that the
and the seventieth is the fact that the
and the seventy-first is the fact that the
and the seventy-second is the fact that the
and the seventy-third is the fact that the
and the seventy-fourth is the fact that the
and the seventy-fifth is the fact that the
and the seventy-sixth is the fact that the
and the seventy-seventh is the fact that the
and the seventy-eighth is the fact that the
and the seventy-ninth is the fact that the
and the eightieth is the fact that the
and the eighty-first is the fact that the
and the eighty-second is the fact that the
and the eighty-third is the fact that the
and the eighty-fourth is the fact that the
and the eighty-fifth is the fact that the
and the eighty-sixth is the fact that the
and the eighty-seventh is the fact that the
and the eighty-eighth is the fact that the
and the eighty-ninth is the fact that the
and the ninetieth is the fact that the
and the ninety-first is the fact that the
and the ninety-second is the fact that the
and the ninety-third is the fact that the
and the ninety-fourth is the fact that the
and the ninety-fifth is the fact that the
and the ninety-sixth is the fact that the
and the ninety-seventh is the fact that the
and the ninety-eighth is the fact that the
and the ninety-ninth is the fact that the
and the hundredth is the fact that the

...the ... of the ...
...the ... of the ...
...the ... of the ...
...the ... of the ...

...the ... of the ...
...the ... of the ...
...the ... of the ...
...the ... of the ...

...the ... of the ...
...the ... of the ...
...the ... of the ...
...the ... of the ...

...the ... of the ...
...the ... of the ...
...the ... of the ...
...the ... of the ...

...the ... of the ...
...the ... of the ...
...the ... of the ...
...the ... of the ...

- *iv. The troops will advance in review order.
- v. A Royal Salute will be given, the National Anthem will be played, and colours will be lowered.
- vi. Three cheers will be given for the King (*see* Section 205), at the conclusion of which the Royal Standard will be hauled down."

* If desired, a FEU-DE-JOIE may be fired, as laid down in Sec. 205, in place of the *Advance in Review Order*.

8. Page 282. Section 205, lines 14 and 15.—*Delete* from "Colours" in line 14 to "Regulations)" in line 15.
-

By Command of the Army Council,

THE WAR OFFICE,
31st January, 1929.

LONDON:

PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE

To be purchased directly from H.M. STATIONERY OFFICE at the following addresses:
 Adastral House, Kingsway, London, W.C.2; 120, George Street, Edinburgh;
 Yeck Street, Manchester; 1, St. Andrew's Crescent, Cardiff;
 15, Donegall Square West, Belfast;
 or through any Bookseller.

1929

Price 1d. net.

CONTENTS

CHAPTER 1

BATTLE

SEC.	PAGE
1. General considerations	1
2. Morale, command and general duties in battle ...	5
3. Infantry weapons	8
4. Fire and movement	13
5. Co-operation with the other arms	14
6. The phases of the battle	32
7. Fire direction, fire control and fire discipline ...	37
8. Use of ground... ..	41
9. The duties and position of infantry commanders in action	44
10. Inter-communication and passing of orders ...	46
11. Use of smoke	49

CHAPTER II

ATTACK

12. General considerations	52
13. The battalion in the encounter attack	58
14. The company in the encounter attack	77
15. The platoon in the encounter attack	84
16. The section in the encounter attack	90
17. The deliberate attack	93
18. Raids	97

CHAPTER III

DEFENCE

SEC.	PAGE
19. General considerations	99
20. General organization of a defensive position ...	103
21. The battalion in defence	109
22. The company in defence	119
23. The platoon in defence	127
24. The section in defence	130
25. The construction of defences	134
26. Reliefs	135

CHAPTER IV

PROTECTION

27. General considerations	138
28. Advanced guards	140
29. Flank guards	145
30. Rear guards	148
31. Outposts. General considerations	156
32. The battalion on outposts	161
33. The outpost company	165
34. Duties of the commander of a unit on piquet or in support	167
35. Sentries and sentry groups	169
36. Detached posts	171
37. Traffic through the outposts	171
38. Outpost patrols	172
39. Battle outposts	173
40. Protection from aircraft	173
41. Visibility from the air	174

CHAPTER V

FIGHTING IN CLOSE COUNTRY, WOODS AND VILLAGES

CLOSE COUNTRY FIGHTING

SEC.	PAGE
42. Influence of close country on tactics	177
43. The attack in close country	178
44. The defence in close country	180

WOODS AND VILLAGE FIGHTING

45. General considerations	182
46. The attack in woods	183
47. The defence in woods	187
48. The attack on villages	190
49. The defence of villages	193

CHAPTER VI

NIGHT OPERATIONS.

50. General considerations	196
51. Night marches	198
52. Night advances	200
53. Night attacks	202
54. Night withdrawals	208

CHAPTER VII

AMMUNITION SUPPLY

55. General considerations	210
56. System of distribution in front of railhead	210

SEC.	PAGE
57. The S.A.A. section of the ammunition company...	211
58. The direct issue from and replenishment of the battalion S.A.A. wagons and pack animals ...	212

CHAPTER VIII

ORDERS, REPORTS AND MESSAGES

59. Orders and instructions	217
60. Issue of orders	218
61. Operation orders	219
62. Orders in mobile warfare	221
63. Execution of orders	221
64. Clearness	222
65. Rules for writing orders, reports and messages ...	223
66. Reports and messages in the field	226
67. Reports and sketches	227

CHAPTER IX

(A) WORKING PARTIES AND TASKS

(B) ASSAULT BRIDGING

(A) WORKING PARTIES AND TASKS

68. Field works	230
69. The engineer officer in charge of the work ...	231
70. The officer in command of the working party ...	231
71. The officer in command of the covering party ...	232
72. Action in case of attack	232

SEC.	PAGE
73. Demand for and distribution of working parties	232
74. Filing on to the work	233
75. Allotment of tasks	235
76. Arms and equipment	235

(B) ASSAULT BRIDGING

77. General	236
78. Tactical considerations	236
79. Reconnaissance	238
80. Covering parties	239
81. Forming bridge	239
82. Carrying	240
83. Launching	240
84. Action subsequent to launching	241
85. Traffic control	242

LIST OF APPENDICES

APPENDIX

I.—Specimen report	243
II.—Specimen message	244
INDEX	246

LIST OF PLATES

(Following page 277)

PLATE

- I.—Suitable battle formations for a battalion in the early stages of the attack
- II.—Suitable battle formations for a company in the early stages of the attack

LIST OF PLATES—*continued*

PLATE

- III.—Suitable battle formations for a platoon in the early stages of the attack
 - IV.—Organization of a defensive position in mobile warfare
 - V.—Development of positions shown in Plate IV when conditions of position warfare supervene
 - VI.—Distribution of advanced guard moving on one road
 - VII.—Distribution of outpost companies
-

INFANTRY TRAINING

VOLUME II

WAR

CHAPTER I

BATTLE

1. General considerations

1. The conditions of battle vary in every case according to the climate, season, and physical features of the country, and to the relative strength, armament, physical condition and fighting spirit of the opposing forces. No rules of unvarying application can therefore be laid down for the handling of troops in war. Nevertheless there are certain guiding principles, the application of which has been proved by experience to be essential to victory. These principles are set forth in Field Service Regulations, Vol. II, on which this book is based.

2. The ultimate military aim to be attained in war is the moral disorganization and material destruction of the enemy's

main forces on the battlefield ; it can only be achieved by battle.

Battle includes *offensive* and *defensive* action ; the higher commander uses one or the other, according to the general requirements of the situation. **It must, however, always be borne in mind that victory can be won only as a result of offensive action.**

3. Automatic weapons confer great power on the defence in modern war but experience has proved that the defence of the most powerfully organized positions can be broken down by a combination of superior fire resources and the effect of surprise.

The commander who first assumes the offensive gains a great moral superiority over his opponent. He forces the latter to abandon the initiative and to conform to his movements ; if, in addition, he succeeds in surprising the enemy while in the act of manœuvring, he gains a further considerable advantage.

The offensive has proved to be more economical than the defensive, as the number of prisoners and the amount of material which fall into the enemy's hands in an unsuccessful defence make the total losses heavier than in attack.

The offensive spirit, therefore, should be inculcated to the utmost in all ranks, but it must be remembered that, in war, it is not possible to attack at all times and on every occasion. **Above everything, commanders must realize that to launch infantry to the attack insufficiently supported by fire is to court disaster.**

4. The aim of the *defensive battle* is to meet and defeat the enemy's offensive as a preliminary to the resumption of offensive action.

A defensive attitude is adopted when :—

- i. It is necessary to economize troops on one portion of the front in order to swell the numbers for offensive action elsewhere.
- ii. Time must be gained for the concentration of the necessary troops and resources for an offensive.
- iii. It is essential to deny to the enemy some point or area of military or political importance.
- iv. Disparity in numbers or armament precludes the resumption of the offensive with any reasonable prospect of success.

The numbers required to hold a prepared defensive position will generally be less than those required to take it. In addition to the resulting economy of force, the principal advantage inherent in the defence is the opportunities which it presents for the development of fire from concealed positions in pre-determined directions and by surprise. Nevertheless, even when successful, the defensive can never lead to decisive victory. The enemy may suffer heavy losses and appear to be defeated, but the destruction of his armed forces, by which alone decisive victory can be won, demands movement in the form of a counter-offensive.

5. *Surprise* is the most effective and the most powerful weapon in war ; it places in the hands of the commander who achieves it an advantage which goes far to counter-balance any superior resources which the enemy may possess.

To guard against surprise, by taking proper measures for security, is therefore the first duty of every commander in the field.

6. *Security* can only be provided for by an efficient system

for obtaining information, by the correct disposal of troops in depth and by the retention of mobility.

Information, both strategical and tactical, is obtained in war by the R.A.F., by cavalry and armoured cars and from other sources (prisoners, agents, inhabitants, &c.). Such information enables a commander to calculate the time at his disposal for the development of his plan without risk of serious interference from the enemy.

In addition to the organization of the above means for obtaining information, security is provided for by the disposal of protective detachments between the enemy and the main body. These detachments are drawn from the troops to be protected, and are called advanced guards, flank guards, rear guards or outposts, according to the nature of the duties to be performed. They are relatively weak if the enemy is at a distance, but are increased in strength as contact becomes more imminent and their task consequently more difficult.

Under all circumstances the main role of these protective detachments remains the same: to gain time for the commander to put his plan into execution. To fulfil their mission protective detachments must be disposed in depth; so far as small units are concerned, their action, when employed on protective duties, will correspond generally to that assigned to them in attack or defence.

In rear of the protective detachments the main body should also be disposed in depth in order that the commander of the force may retain his liberty of action, *i.e.*, be able to adapt his dispositions to the situation as it develops

2. Morale, command and general duties in battle

1. Discipline, by which the morale of a force can alone be maintained, is the bedrock of all training. Battle is, above everything else, a struggle of morale. Where both sides are equally matched victory inclines, in the end, to the one whose morale remains the better and not necessarily to the force which has suffered less in casualties and material.

2. Every leader, whatever his rank, must realize that victory cannot be won by the bravery of the men alone. Isolated efforts of individuals, however gallant, will have no lasting effect unless they are co-ordinated by leaders who, knowing their profession, are capable of exploiting any success gained to the fullest extent.

As infantry bears the brunt of the fighting in modern war and suffers the heaviest casualties, it is more influenced than the other arms by the fluctuations of the battle. Much, therefore, depends on the qualities of leadership displayed by its commanders, their example and their sympathetic understanding of those under them. To be human is an asset to be cultivated, and the welfare of their men must be the constant care of all commanders.

It is by the confidence which they inspire, and by their knowledge of human nature, that commanders exercise their authority and maintain the morale of their troops. It is their duty to study the capabilities and characters of commanders subordinate to themselves and to foster by every means in their power the mutual understanding which is essential for success.

To be successful leaders in war all commanders, even of the smallest units, must have character, resource and confidence

in themselves, and in the troops under them. Conversely, they themselves must inspire the confidence of those they lead. Whatever natural qualifications he may possess a commander cannot reasonably hope to have confidence in his own judgment and decision in the heat and danger of battle unless he has carefully studied his profession and has acquired a thorough knowledge of his duties.

3. To lead infantry in battle a commander must :—

- i. Be able to grasp a tactical situation rapidly. Be clear in his own mind as to what he should do in order to comply with the orders he has received and to carry out the intention of his superior commander.
- ii. Take the necessary steps to gain all information possible as to the enemy's distribution and movements and to keep himself informed at all times of the dispositions and progress of his own and neighbouring troops.
- iii. Have the ability to use all the information at his disposal to the best advantage for the solution of the problem in hand and the necessary military knowledge to anticipate the probable steps the enemy may take to frustrate his plan when it is put into action.
- iv. Be capable of expressing his plan in clear and concise orders either verbally or on paper.
- v. Dispose his troops in suitable formations to ensure flexibility so that adjustments can be made during the course of the battle to meet unforeseen circumstances. This includes an intelligent anticipa-

tion of the probable use of his reserve and quick decision as to its employment.

- vi. Have a sound knowledge of the use of ground so that its varying features may be properly employed to obtain success.
- vii. Have a sufficient knowledge of the other arms to ensure that the best results are obtained from their co-operation.
- viii. Possess the determination of character and physical fitness to carry his plan through to the bitter end. **Success in battle depends on a sound and simple tactical plan and on the tenacity and perseverance with which it is put into effect.**

Inaction and the fear of taking responsibility are unpardonable faults in any leader, however junior.

4. The good *fighting qualities* of the individual infantry soldier depend on discipline, esprit de corps, confidence in his leader and training. Pride in himself and his unit, both of which are inculcated by drill and smartness on parade, have been proved by experience to lead to tenacity in battle.

All ranks must be taught that it is a disgrace to lay down their arms in the field and that the chief responsibility for such an act rests on the leader. In war small detachments have often held out for several days and, by so doing, have materially assisted the general plan of the operations. When ammunition is exhausted, recourse must then be made to a final effort with the bayonet. Similarly no body of troops is justified in withdrawing because it feels itself outflanked or turned, or because it sees its neighbours falling back.

When the enemy is attacking, all movements from front to rear, except of wounded men, should be reduced to an absolute minimum, and commanders must take care that nothing is done which may give an impression to anyone that the line is giving way.

5. Any attempts by the enemy to enter into conversation or to use flags of truce should be regarded with suspicion. Bodies of the enemy who wish to surrender must lay down their arms first as a sign of capitulation.

6. Should anyone fall into the enemy's hands he must give no information except his true name and rank. To give any additional information, under examination, is an act of gross disloyalty, as it may not only prejudice the success of the operations in progress but may also endanger the lives of his comrades. To refuse to answer any other questions, however innocent they may appear, must be a point of honour, and will enforce the respect and admiration of the enemy.

3. Infantry weapons

The Rifle and Bayonet

1. The rifle and bayonet are the principal weapons of the individual infantry soldier ; in the last resort the battle can be won only by their means. The first requirement of the infantry soldier is, therefore, confidence in the rifle and bayonet, based on his skill in their use.

2. Accuracy is the chief characteristic of the rifle, whilst rapid fire enables well-directed bursts, up to a maximum of 15 rounds a minute, to be produced for short periods when particularly favourable targets are presented.

3. The bayonet is the weapon for hand-to-hand fighting, and its use, or the threat of it, finally drives the enemy from his position or causes him to surrender. It is the principal infantry weapon in night fighting.

4. Although the rifle has a range of nearly two miles, its effective use in practice is limited by the visibility at the moment and the skill of the user.

Beyond 1,000 yards the fire of even well controlled units of infantry seldom has much effect. Only very exceptional circumstances, such as a considerable number of the enemy grouped in a vulnerable formation, would justify its use. Even then such targets are usually best dealt with by machine-gun fire.

Between 1,000 and 600 yards little result can be expected from individual fire, but carefully controlled collective fire may be expected to produce effective results at these ranges. Within 600 yards, although carefully controlled collective fire will produce the best results, individual fire, when control is no longer possible, will also obtain good effect provided the firers have been well trained.

The Lewis gun

5. The Lewis gun is the principal weapon of 50 per cent of the fire units of the infantry and must on no account be regarded as a specialist weapon; its chief characteristic is its power of delivering a heavy volume of fire with the employment of a few men.

6. It is a shoulder-controlled light automatic weapon containing delicate mechanism, is air-cooled and capable of firing at the rate of between six and seven hundred rounds a

minute. To avoid overheating and continuous strain and also excessive expenditure of ammunition without compensating effect, it is best to fire in short bursts of four or five rounds.

7. The highly concentrated nature of its fire permits of only a small margin of error in aiming, range estimation or allowance for the effect of atmospheric conditions.

8. Taking into account the time required for changing the magazines and for aiming between short bursts of fire an average of 150 well-aimed rounds can be fired in a minute. This high rate of fire does not necessarily produce the best results; short bursts of fire with long pauses between them are often more disconcerting to the enemy's morale.

9. Except as outlined in para. 7 above, the effective range of the Lewis gun in practice is the same as the rifle.

The Rifle and Hand Grenade

10. The rifle grenade (high explosive [H.E.]) has a maximum range of 200 yards and a minimum range of 80 yards. It travels on a high trajectory and falls at a steep angle and is, therefore, suitable for searching behind steep cover and forcing the enemy out into the open where he can be dealt with by rifles or automatic weapons.

The smoke grenade has a maximum range of 250 yards and forms a good smoke screen of short duration behind which movement can take place unseen by the enemy. The area covered by the smoke depends on the wind. Normally the screen remains dense for about 30 seconds: consequently advantage can be derived from it only if the forward movement starts simultaneously with the formation of the smoke screen.

Owing to weight, the number of grenades which can be carried by a section is strictly limited: H.E. grenades should therefore be used only when other means of dislodging the enemy are obviously impracticable. Concentration of fire usually produces the best result.

11. Hand grenades can be thrown only a short distance and, if used in the open, are as dangerous to our own troops as to the enemy. Consequently they must be regarded merely as a means of dislodging or destroying the enemy in house to house or trench fighting. Even in a trench system success can usually be won more cheaply and more rapidly by movement above ground covered by small-arm fire.

Machine guns

12. The machine gun is the most powerful of all infantry weapons owing to the fact that it is capable of producing rapid, accurate and sustained fire and presents a small target in action.

The smallest tactical unit is a section of four machine guns; the more forward guns, however, both in attack and defence, have usually to be employed by sub-sections. The sub-section is the smallest fire unit; the use of single guns must be avoided as it results in a dissipation of fire due to a lack of control.

Only three men are actually needed with each gun in action, but the movement necessitated by supply (ammunition, water, oil, &c.), makes a careful choice of position essential if concealment is to be obtained and casualties avoided.

13. Machine-gun ranges are defined as follows:—

- i. Close range up to 800 yards.
- ii. Effective range, 800 to 2,000 yards.
- iii. Long range, 2,000 to 2,900 yards.

14. The characteristics of the machine gun are :—

- i. Its power of delivering a concentrated volume of accurate and sustained fire for long periods. Owing to the tripod mounting this fire can be switched rapidly to engage suitable targets which may suddenly present themselves from another direction.
- ii. The length of its beaten zone in proportion to its width. Fire is therefore very effective when delivered in enfilade at close and effective ranges. Oblique and enfilade fire at these ranges has a great moral effect, the actual emplacements are difficult to locate and, unless they are adequately dealt with by fire, the area of ground so swept is rendered practically impassable by infantry.
- iii. Effective fire over the heads of their own infantry can, owing to the fixed mounting be carried out with safety at long ranges. Direction and elevation can be maintained both by day and night and indirect fire employed with confidence.
- iv. Mobility.—Where speed is essential three men of each machine-gun detachment can be carried on the limbered wagons in which case they can move quicker than infantry. If the guns are carried on pack and the animal is led by a man on foot, their rate of advance is rather less than that of infantry.
When man-handled by their detachments, machine guns cannot keep pace with infantry in a rapid advance on account of the weight of the gun, mounting and ammunition loads.

15. Direct fire is the normal and most effective method of engaging a target ; it should therefore be employed whenever possible. Cases will, however, frequently arise, even in mobile warfare, when it may be necessary to use indirect fire, *i.e.*, in smoke, mist or darkness.

16. In all operations a machine-gun commander must receive definite orders as to his tasks. He must be allowed as much latitude as possible in carrying them out and must be informed of all changes in the situation which may affect his action.

17. Machine-gun support can be organized either by :—

- i. Leaving the machine-gun platoons in the hands of the battalion commanders.
- ii. Leaving the machine-gun platoons of forward battalions in the hands of their battalion commanders, and grouping those of the battalions in brigade reserve under brigade control.
- iii. Allotting a portion of the machine-gun platoons of the battalions in brigade reserve to the forward battalions, while retaining the remainder under brigade control.
- iv. Placing all the machine-gun platoons of the brigade under brigade control.

In whatever way they are employed, the importance of retaining depth in their disposition must not be forgotten.

4. Fire and movement

1. The bedrock of infantry tactics is the combination of fire and movement. Both are essential to victory.

In the face of opposition, fire is necessary to make move-

ment possible. To give an attack reasonable prospects of success the enemy's fire must, throughout the operation, be kept in subjection. In other words, superiority of fire is essential; given this the attack is free to advance with every prospect of success. **To attempt movement, inadequately prepared and insufficiently supported by fire, is to risk a premature check.**

It is therefore essential to the success of an offensive operation that every commander shall organize the whole of his available fire resources to the best effect and so dispose his command that once fire superiority has been obtained, he may be enabled to close rapidly with the enemy and complete his overthrow.

2. Whilst in an attack on a large scale, other arms are primarily responsible for producing the fire necessary to cover the forward movement of the infantry, the latter must do everything possible with its own weapons to cover its own advance and finally to turn the enemy out of his positions by assault.

In defence, the infantry use their fire to stop the enemy's attack whilst the skilful use of movement will often help to delay his advance. The success of a counter-attack is dependent on the combination of fire and movement.

5. Co-operation with the other arms

Cavalry

1. Cavalry is armed with a lance or sword for mounted action and with machine guns, Hotchkiss guns, and rifles, for dismounted action. It can combine fire and mounted action, while its mobility enables it to take greater risks in

attack and defence than would be justified in the case of infantry.

In battle it is employed to reconnoitre, to protect the flanks, to co-operate with the other arms in turning movements, or to act as a mobile reserve, and finally to exploit the success of the other arms, or to cover their withdrawal.

Though cavalry is capable, if required, of undertaking most operations which infantry can carry out, it is wasteful to employ cavalry dismounted as infantry owing to the number of men necessary for horse holders. It is for this reason that a dismounted cavalry formation cannot be given the same tasks as a similar infantry formation. For example, two cavalry regiments dismounted are approximately the equivalent in rifle strength to one infantry battalion.

In dismounted action cavalry can break off the fight more easily than infantry. After breaking off a fight it can be withdrawn more rapidly than infantry and is, therefore, of great value in fighting a delaying action.

2. The most frequent cases in mobile warfare in which close co-operation between infantry and cavalry will take place is in protective duties. In advanced guard work, flank guards, and in day outposts where the opposing forces are a considerable distance apart, the cavalry will be the first to make contact with the enemy; it will supplement the information already received as a result of air reconnaissances and so assist the commander to make his plan. In delaying action a body of cavalry will usually be operating between the infantry and the enemy.

In battle, when the enemy's resistance is finally broken down, it may be necessary to pass the cavalry through the attacking infantry in order to exploit success. This operation

is difficult and requires the most careful arrangements for liaison between the two arms.

Artillery

3. The task of the artillery in battle is to prepare the way for the action of the other arms, to assist them in breaking down the opposition and to afford them every possible support: it is the principal means by which the necessary superiority of fire is gained on the battlefield. It must nevertheless be remembered that no matter how heavy the shell employed, the total obliteration of all the enemy's defensive works and the annihilation of their garrisons are impossible.

Artillery is able, under certain conditions, to develop unexpectedly an overwhelming bombardment and to engage targets by day and night without observation and yet with accuracy. It is thus able to bring harassing fire upon the enemy's communications many miles behind the front, while in attacking batteries or in the sudden concentration of fire on fleeting targets its fire may be controlled by means of air observation. In addition, if time is available for the preparation of the programme, and ammunition is readily accessible, it can afford invaluable support to advancing infantry by means of barrage fire and can screen its movements from observation by means of smoke shell.

4. The various natures of artillery which are used for the support of infantry in battle are :—

- i. *Pack Artillery*.—The 3-7-inch howitzer fires both H.E., shrapnel and smoke shell and has a maximum range of 5,900 yards. 114 rounds a gun are carried in action.

Its mobility and the fact that it is less conspicuous than other light artillery when in action in close country make pack artillery particularly valuable for the close support of infantry. It may also be employed as an anti-tank weapon.

A proportion of the available pack howitzers will usually be sub-allotted to attacking brigades for the close support of battalions. The chief considerations governing the selection of positions for these pack howitzers are :—

- (a) Proximity to the headquarters of the battalion with which they are working.
- (b) Facilities for observation. It is important that whenever practicable they should be controlled by voice by the artillery officer directing their fire.

ii. *Field Artillery*.—The field gun (18-pdr.) has a maximum range of 10,600 yards with H.E. and 6,500 yards with shrapnel. The field howitzer (4·5-inch) has a maximum range of 7,000 yards and fires H.E. and smoke only.

Field artillery forms the bulk of the guns which accompanies infantry in the field. Its long range forces the infantry to deploy from column of route before the latter comes under fire from the infantry weapons of the defence. Field artillery is also used to assist in the destruction of such of the enemy's defences as are vulnerable to its H.E. shell, and for wire cutting if tanks or mortars are not available for that purpose. In addition to the

pack artillery it can be employed for anti-tank defence. It will be useful in counter-battery work against such batteries as are within its range and for raking communications in the forward area.

In the attack it provides, in co-operation with other arms, the covering fire to enable the infantry to advance. For this purpose a four-gun battery can effectively cover a maximum front of 150 yards in support of an attack, and a six-gun battery 200 yards. At the rate of four rounds a gun a minute fire can be maintained continuously for 44 minutes without dumping extra ammunition. If the divisional ammunition column is emptied as well, fire can be kept up at the same rate for a further 31 minutes. In actual practice a 20-minute shoot at the above rate can be safely carried out in mobile operations and still leave the wagons half full to meet contingencies such as a counter-attack, &c. The above figures are all given to serve as a rough guide.

- iii. *Medium Artillery*.—The 60-pdr. gun has a maximum range of 16,100 yards with H.E. and 15,100 yards with shrapnel. The maximum range of the 6-inch howitzer is 10,800 yards with H.E.

The 6-inch howitzer is available for counter-battery work, for wire cutting with instantaneous fuze, for the destruction of defences and for increasing the depth of the field gun covering fire.

The 60-pdr. is used in counter-battery work, for covering fire beyond the range of the field

artillery, for raking communications and engaging targets of opportunity such as reserves moving forward in close formations.

5. In battle the closest co-operation is essential between artillery and infantry, and no steps must be spared to secure it.

As the support afforded by the artillery is so important, infantry commanders must do everything in their power to keep the artillery continuously informed of the position of their forward troops and to indicate clearly where and when artillery fire is required.

6. The various methods of inter-communication between infantry and artillery are :—

- i. Personal liaison between the respective commanders.
- ii. Artillery liaison officers attached to the infantry.
- iii. Signalling.

7. *Personal liaison* is the most satisfactory in all circumstances, whether before or during an operation. To secure this the artillery and infantry headquarters should, whenever possible, be placed close together.

It is essential that the artillery commander should be able to supervise and control the fire of his guns from his headquarters; in mobile operations, especially where long communications are impracticable, this will often necessitate his being close to his batteries. In these circumstances the infantry commander, if he can do so without prejudicing either his control of the infantry battle or the maintenance of touch with his superior commanders, should move his own headquarters into close proximity to those of the artillery.

In practice it will often be found impracticable for the

two headquarters to adjoin, and the responsibility for ensuring continuous inter-communication will then rest with the infantry commander. This, however, does not absolve the artillery commander from doing everything in his power to assist in the maintenance of inter-communication. The latter will detail a competent artillery liaison officer, provided with means of communication, to accompany the headquarters of the infantry commander he is supporting. The duties of this liaison officer are to represent his commander, to advise the infantry commander, and to keep him informed on all matters relating to artillery co-operation; he is also charged with the responsibility of transmitting to his unit the situation of the infantry and the infantry commander's intentions and requirements as regards artillery support.

8. The role of the artillery in *attack* may be summarized, in general terms, under the following headings:—

- i. *Preparation*.—Anything in the nature of a preliminary bombardment militates against complete surprise, but is usually essential where strong defences have to be attacked without the aid of tanks. The object of it is to deal with the enemy's defensive organization (field works, batteries, communications, &c.) with a view to inflicting losses and so undermining the morale of the defence and interfering with traffic on roads and tracks (reinforcements, supplies and ammunition). The length of the bombardment depends on the anticipated strength of the defences and the importance attached to surprise. It is carried out by the medium and field artillery.

- ii. *The actual support of the attack.*—This either takes the form of a barrage or else consists of artillery concentrations on successive localities. Whichever method is used, time programmes, based on the anticipated rate of advance of the infantry during the attack, are generally employed, at any rate during the opening phases of the attack. This support is the special duty of field artillery, sometimes reinforced by medium artillery.
- iii. *Counter-battery work and harassing fire.*—The former usually consists of neutralizing fire directed against known battery positions, whilst the latter is directed against important communications (roads, railheads, villages, &c.) which have to be used by reinforcements (men, ammunition, &c.) moving to the front. This form of fire is the duty of the medium artillery, sometimes reinforced by heavy artillery.
- iv. *Close support.*—This normally devolves on the pack artillery, one battery usually being allotted to each infantry brigade to assist it in its advance. On occasions pack batteries may be required to reinforce the divisional artillery in the opening phases of the attack, but this use should be exceptional.

Field artillery is also used for this purpose, either to replace or reinforce the pack artillery.

The infantry commander, to whom any guns are allotted, determines the tasks, but leaves to the artillery commander the method of carry-

ing them out. There is no necessity for the guns to be close to the infantry commander.

9. In *defence*, the broad lines of artillery action may be classified as follows :—

i. *Counter-preparation*.—This is artillery fire directed against the enemy's probable forming-up places and forward communications so as to disorganize and, if possible, break up the attack before it is launched. It is opened as soon as it is known by reconnaissance (air, mounted or infantry patrols, O.Ps., &c.) or from other sources that the enemy is massing for attack.

ii. *Counter-battery work*.—This usually presents considerable difficulty to the defence for the following reasons :—

(a) The enemy will probably have concentrated a preponderating weight of artillery for the attack.

(b) Owing to modern methods the attacker can bring his guns into action at the last moment without the need for registering them beforehand.

(c) It is to be expected that he will open his counter-battery fire on the guns of the defence as soon as he realizes that the hope of complete surprise is impossible owing to the commencement of counter-preparation.

iii. *Co-operation with the other arms in repulsing the assault*.—This will either take the form of a curtain of

fire (barrage) or else will consist of heavy concentrations on the most probable lines of approach for the attack, such as valleys, &c., which give cover from view. A barrage along the whole front is generally not possible as, except in position warfare, the number of guns available in any defensive position is usually insufficient.

- iv. *Anti-tank defence.*—Where the ground is favourable for a tank attack a proportion of the defending artillery must be specially detailed for anti-tank defence in the forward area. The guns allotted to this task should be sited well forward so as to deliver sudden fire at short ranges at the tanks. Artillery so placed can also engage the attacking infantry if no tanks are being employed by the enemy. It will be readily understood that such fire has a most demoralizing effect and can do a great deal towards breaking up an attack.

All guns must be prepared to engage a tank attack whether specially sited for anti-tank defence or not.

10. *Artillery escorts.*—As a rule guns are protected by the disposition of the other arms, and, as batteries are armed with light automatics, they have considerable means of self-defence. But it must be remembered that the artillery zone is often given as the objective of an infantry attack and that battery positions may therefore require strong local protection. When guns are ordered into exposed positions, there may be occasions on which the artillery commander may think it necessary to apply for a special escort. It is then the duty of the senior officer, whether artillery or

infantry, to issue the necessary orders to the escort; this done, the escort commander must be given a free hand in carrying out the orders received.

The duties of the escort will be :—

- i. To give timely warning of any attack.
- ii. To keep the enemy beyond effective rifle range of the guns, or, in case of necessity, to cover their withdrawal.

Engineers

11. The duty of divisional engineers is to further tactical operations in progress, or in contemplation, by the construction of works requiring special technical skill, such as the provision of tracks, repair of roads, bridging, special field defences, demolitions, location and removal of mines, clearance of obstacles, special camoufiage and engineer reconnaissance as a preliminary to more permanent work by the engineer units allotted to corps and armies. Engineer units are equipped with the tools necessary for their work, but, with the exception of a limited quantity of bridging stores, they do not carry materials for works of construction.

Although trained to fight as infantry, engineers should be regarded as reserves and only used as a last resource, casualties in their ranks being difficult to replace.

Should engineers be working in an area where the enemy makes a surprise attack, they pass automatically, under the orders of the infantry commander of the sector in which they are working and fight with the infantry, being relieved when the situation permits.

Detachments of engineers assisting infantry in works for which the latter is responsible. will work under the orders

of the infantry commander. Similarly when detachments of infantry are detailed to assist the engineers in work for which the latter are responsible, they will work under the orders of the engineer officer in charge of the work.

Infantry is responsible for siting, organizing and constructing its own defences, wire entanglements, &c.; when required, minor technical assistance and materials will be supplied by the engineers. An officer (or N.C.O.) of the engineers, attached to infantry formations to assist them by technical advice will be of great assistance, especially at the commencement of a campaign.

Field works will be regarded as a military duty and will be executed as a military operation.

Tanks

12. The principal duty of tanks in battle is to assist the advance of the infantry, when the latter is unable to advance owing to the enemy's rifle and machine-gun fire, by dealing with the localities which are holding it up. Their ability to combine fire with movement, and the protection which their armour provides, makes them peculiarly suitable for dealing with machine-gun positions and similar localities. They must not be used to seek out objectives, but should always be given definite localities to subdue. As they are very vulnerable to fire from special anti-tank weapons and guns, it is the duty of the other arms to protect them from such fire to the utmost of their capacity. Tanks are the most effective weapons for dealing with tank counter-attacks. They will also often be used to assist infantry to exploit success.

As tanks have difficulty in locating targets, when they

themselves are under fire, troops co-operating with them must assist them with information at every possible opportunity.

13. The light tank is armed with one 3-pdr. gun, two Vickers machine guns and two Hotchkiss guns (one of which is carried as a spare). A company of tanks has an average speed over good ground of 6-7 m.p.h. and a circuit of action of 135 miles across country. The average speed of a company of tanks on the road is 7-8 m.p.h. by day and 6 m.p.h. by night. The light tank is capable of crossing a 6-foot trench and can surmount a vertical obstacle 3 feet high.

The limiting factors of the tank are its visibility and vulnerability to shell fire. To overcome these, smoke should be used whenever possible to screen the movement of tanks, and good counter-battery work and fire from infantry weapons is necessary to engage the enemy's anti-tank guns. Deep cuttings, swamps, very heavily shelled ground, rocky mountainous country and thick woods, including tree stumps protruding more than 18 inches, in the case of felled trees, are serious obstacles to tanks.

14. An attack carried out by tanks and infantry should be considered as one operation, in which each arm helps the other. Therefore infantry and tanks carrying out an operation together must act under the orders of one commander, normally the infantry commander. In practice the battalion should be the lowest unit to which tanks are attached.

15. For the purpose of co-operation with infantry two simple flag signals are used by the Royal Tank Corps :—

- i. Green and white flag.—The opposition is crushed ; all is clear for you to come on.
- ii. Red and yellow flag.—The tank is broken down ; do not wait for it.

In addition, a signal should be arranged, and varied from time to time, to denote "Friendly tank coming out of action."

Aircraft

Army co-operation squadrons

16. Successful co-operation between aircraft and infantry largely depends on the knowledge each arm has of the tasks, capabilities and limitations of the other. To ensure it in battle, the observer must be fully acquainted with the plans and tasks of the troops on the ground and the latter must arrange that all necessary signals are displayed immediately they are called for and shown continuously until an acknowledgment is received from the aeroplane.

17. *Reconnaissance*.—Army co-operation (A.C.) squadrons carry out any reconnaissance of the enemy's positions required by the commander of the army formation concerned. They report, by the approved methods, the positions of our own and the enemy's troops and any hostile movement seen.

Close reconnaissance (Cl.R.) aeroplanes are normally sent out at dawn and, weather permitting, remain continuously in observation during daylight, one aeroplane relieving another until dusk, so that any change in the enemy's dispositions may be noticed.

A Cl.R. aeroplane charged with the special mission of reporting the position of our own troops carries black strips 12 inches wide painted on the under surface of the lower planes from the leading to the trailing edge about 8 feet from the fuselage; these strips are continued by flaps of three-ply wood 18 inches long.

18. *Inter-communication* :—i. *Air to ground.*

(a) Aeroplanes can communicate with troops on the ground by radio-telephony (R/T). By this means Cl.R. aeroplanes can transmit messages to, and receive messages from, the ground up to a range, at present, of 10 miles under favourable conditions. In order to facilitate the reception of signals by the observer the number of ground stations communicating with one Cl.R. patrol by R/T. should be limited to two. Information regarding the position of our own troops is only transmitted by R/T. when the protractor reference method is employed.

(b) *Message dropping.*—It is often necessary for an aeroplane to transmit a message to a formation or unit which is not equipped with R/T. In these circumstances communication is effected by dropping a report in a message bag which has a parti-coloured streamer attached to it to enable it to be seen readily in flight. By this means messages can be dropped quite accurately from a height of 500 feet even in a high wind.

To enable this means of communication to be effective it is necessary for an aeroplane to recognize the headquarters of the formation or unit with which it wishes to communicate. This is accomplished by means of ground indicators which are displayed by the troops whenever an aeroplane flies low in their vicinity and fires **green Véry lights**, or if it is thought likely that it is flying round looking out for them.

Headquarters of brigades and battalions are marked by "ground indicators," of which the form is given below. The identity of the brigade (Fig. 1) or battalion (Fig. 2) is shown by letters, formed by ground strips, displayed beside the indicator. These letters are arbitrarily fixed and constantly changed by arrangement with the air force unit

concerned. They are always arranged so as to be read from the direction of the enemy.

In the case of the brigade the letters will be placed to the left of the ground indicator and in that of the battalion to the left, top, right or bottom, to indicate the 1st, 2nd, 3rd or 4th battalion of the brigade respectively.

Fig. 1.

Infantry brigade headquarters

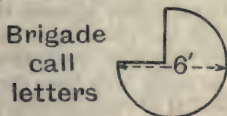
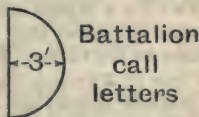


Fig. 2.

Battalion headquarters



(c) *Red Véry lights*.—**Red Véry lights** fired by an air observer denotes that a counter-attack is imminent.

(d) *Klaxon horn*.—The Klaxon horn is used to attract the attention of the troops on the ground ; it may also be used to send a few letters on the Morse code.

ii. *Ground to air.*

(a) *Flares, flaps and discs*.—Infantry can disclose their positions to Cl.R. aeroplanes by means of flares, white cloth flaps or tin discs flashed in the sun ; on sunny days the last is the easiest signal for the observer in the aeroplane to see.

Flares will be lit, flaps moved or discs flashed by the most advanced troops either :—

- i. When called for by the Cl.R. aeroplanes, or
- ii. At specified hours, or
- iii. On reaching definite objectives.

An aeroplane observer calls for signals from the ground by firing **white Véry lights** and sounding a series of As. on

his Klaxon horn. If either method ii or iii is employed, the times and places at which the signals are to be made by the infantry must be laid down in orders.

When flares are employed, they must be lighted in groups of three about every 30 yards by the most advanced troops. If orders have been given for the troops to light them on seeing the signal from the aeroplane and if they are unable to light the flares as soon as called for by the aeroplane, they must wait for a repetition of the signal before lighting them. Otherwise the flares may be lit when the observer is not in a position to see them. Even when lighted in the bottom of a shell hole or a trench, flares can be easily seen from the air.

(b) *Message picking up*.—This method of transmitting messages has certain disadvantages :—

- i. An aeroplane flying very low over a certain area may disclose the presence of our own troops.
- ii. Delay is incurred in picking up messages and during the time so spent an aeroplane may lose valuable information.
- iii. Except under very favourable conditions a certain amount of risk to the aeroplane is attached to the performance of this duty.

Message picking up must be confined to cases when communication is of vital importance and no other means is available. The procedure will then be as follows :—

- iv. A flat open space must be selected well clear of trees, telegraph poles, &c.
- v. The ground indicator of the brigade or battalion will be displayed.
- vi. Two rifles with fixed bayonets, or poles, will be

placed in the ground 10 feet apart at right angles to the wind.

- vii. A ground signal in the shape of an arrow will be placed on the ground midway between the two uprights and 10 yards from them. The arrow must point dead into the wind.
- viii. The message bag will be placed on the ground attached to 30 yards of cordage hemp the ends of which will be joined together. The cordage will then be hung over the two uprights.
- ix. When the message is ready the letter "M" will be put out.

As soon as the aeroplane sees from the ground signal that there is a message for it, a grapnel will be lowered and it will fly low so as to catch the loop of cord suspended between the two uprights.

(c) *Semaphore*.—A device is used by which messages can be sent to an aeroplane in horizontal semaphore. By this means it is possible to send messages either containing information or instructions to the occupant of the aeroplane or for transmission to another formation or unit. In the former case messages are sent in clear, in the latter case in code.

19. Aeroplanes are also employed to take photographs which may be either vertical or oblique. Oblique photographs are panoramic views taken at a comparatively low altitude. They are much easier to understand than vertical photographs, and are very useful in helping the troops to form an idea of the ground over which they have to operate.

20. *Reconnaissance at night*.—On a fine night air observers can detect road movements of troops and transport without the use of flares.

Parachute flares make it possible to detect road movement and also activity in the neighbourhood of camps, dumps and billets, and, by the use of magnesium flares, photographs of important localities can be taken at night.

21. *Offensive action.*—The primary duty of A.C. squadrons is reconnaissance, but each aeroplane carries a few light bombs and two machine guns as part of its equipment.

Troops in trenches do not form a good target for low flying attack and troops in the open only present a good target if they remain in any sort of concentrated formation. In mobile warfare the position of our own troops may often be uncertain, and in this case it is advisable for the military commander to fix a line, behind which no offensive action is to be taken by aeroplanes.

22. *Dropping of supplies.*—Supplies of ammunition, water food, &c., may be dropped from aeroplanes to troops on the ground when no other means of supplying them is available. If the supplies are packed in a special container with a parachute attached, and it is possible for the aeroplane to descend to a height of about 500 feet, they can be dropped undamaged with considerable accuracy.

6. *The phases of the battle*

1. In battle, dispositions are governed principally by the intensity and nature of the enemy's fire and the ground. **Fire is the dominant factor in modern war** ; the attack is based on fire which makes movement possible, the defence on fire which prohibits it.

2. **Subordinate infantry commanders are at all times responsible for ensuring that their commands adopt**

the tactical formation best suited to the requirements of the moment. Every commander must, either by personal reconnaissance or, if this is impossible, by an intelligent study of the map, and of air photographs if available, anticipate the topographical obstacles and the nature of hostile localities which his command is likely to meet. It must be remembered that the longer infantry can be kept in hand the longer control can be exercised and the greater is its power of manœuvre. To keep these formations as big as possible as long as possible must be the aim of every commander. The formation adopted must be such as to minimize losses and facilitate :—

- i. Control.
- ii. Manœuvre.
- iii. The use of cover.
- iv. The passage of obstacles.
- v. Rapid deployment.

3. To understand the reasons for the various formations which are adopted by infantry in war it is necessary to have a general idea of the different phases into which battle is divided. These are :—

- i. The approach march.
- ii. The gaining of contact.
- iii. The attack including assaults.
- iv. Consolidation and exploitation of success.
- v. Defence.

4. In the *approach march* the force advances against an enemy who has either taken up a defensive position or who is also on the march. Before contact is gained the troops

move along the roads in column of route protected by the R.A.F. and cavalry. As the two forces approach each other the mounted troops on each side will come into contact and long range artillery fire, combined with offensive action by the enemy's air forces, may force the troops to forsake column of route; in this case movement across country will be necessary. During this phase infantry commanders will be compelled to adopt suitable formations to protect their units from offensive air action, artillery fire, and possibly, as they approach closer, long range machine-gun fire. The formation to be adopted must be one which will enable battalions to make the fullest use of cover whilst retaining the power of manoeuvre. These conditions will best be fulfilled if battalions are deployed into company columns, platoon or even section columns according to the intensity of the fire, disposed on a wide front and in considerable depth.

5. The *gaining of contact*, as it concerns infantry, may be defined as the time when it first comes under the aimed small arm fire of the enemy. The opposition met at this stage will be from weak detachments, either cavalry or infantry, disposed on wide fronts and operating well in advance of the enemy's main forces. The role of these detachments is to gain time for the commander to put his plan into operation, either for the completion of the defensive organizations in rear or for the execution of some manoeuvre by the main body.

The infantry action during this phase is therefore one of reconnaissance by contact in order to drive in these forward detachments and gain touch with the enemy's main forces so as to secure the information which the commander will require to know in order to form his own plan. It is the duty

of the leading infantry commanders to spare no effort to fulfil this task, and they must be prepared to fight for information so as to ascertain the enemy's dispositions and probable strength.

As the leading infantry comes under the effective fire of machine guns and rifles it will be forced to fight its way forward with its own weapons and such artillery and possibly tank support as is immediately available. It is essential that the operations of the different arms be controlled and co-ordinated. The action will be one of fire and manœuvre: fire to make the manœuvre possible, and manœuvre to outflank the enemy's localities as quickly as possible. Those platoons and sections which find themselves opposed frontally will be forced to extend and will continue to fight their way forward by means of their own fire and that of such artillery and tanks as may be available; others, who are either weakly opposed or not opposed at all, will be able to work their way forward in the gaps and by outflanking the hostile detachments force them to surrender or to retire. This form of advance consists in making the best possible use of ground to manœuvre round and outflank an enemy whose defences are not continuous. Sooner or later the time will come when the leading troops are no longer able to advance by this means: they will find themselves held up along the whole front—the main attack then begins.

6.—i. The *main attack* is an action carried out by all the forces at the disposal of a commander, and is thus an operation involving all arms. Time is needed for preparation, the length of which varies according to the resources (artillery, tanks, &c.) the commander intends to employ. It is dealt with fully in Chapter II.

As the defence in modern warfare will always be disposed in depth, the attack will consist of a series of operations to capture in turn each of the localities which the enemy is defending. **An attack may therefore be defined as a methodical progression from objective to objective, or defended locality to defended locality, involving a succession of assaults until such time as the final objective is reached.**

ii. The *assault* is the final act in an attack. The moment for the delivery of the assault may either be fixed in accordance with a carefully pre-arranged time programme or may manifest itself as the result of the definite establishment of fire superiority by the attacking troops actually in contact with the enemy, reinforced if necessary by fresh troops and tanks. Once this superiority of fire has been gained, as shown by a diminution in the volume of the hostile small arm fire and perhaps also by the movement to the rear of parties of the enemy, it is possible that an outflanking movement or the mere threat of it combined with a continuous frontal advance, may be sufficient to cause the enemy to surrender. Against a stubborn enemy, however, and especially in a trench to trench attack, an actual assault with the bayonet will usually be necessary. An assault does not necessarily concern all the troops of a battalion at the same time.

7. Broadly speaking *consolidation* consists in organizing the successive objectives, as they are captured, against possible counter-attacks. When consolidated, these objectives also serve as rallying points should the leading troops be driven back during their further advance by successful offensive action on the part of the enemy.

Exploitation of success consists in the first place in the following

up by fire of the retiring enemy and lastly a relentless pursuit by all arms, should the enemy retire in disorder, with a view to his complete disorganization or capitulation ; on the other hand, should he retire in good order contact with and pressure on him will be maintained so that, if opportunity offers, the attack can be resumed with the least possible delay.

8. *Defence.*—A commander may decide to occupy temporarily a defensive position for any of the reasons given in Sec. 1, 4. The guiding principles of defence are, firstly, that the force must be disposed in depth, and secondly, that the numbers employed on the defensive must be kept as low as possible in order to set free the greatest numbers possible for eventual offensive action.

The framework of the defence will largely depend upon the positions available for the artillery and machine guns. For this reason the selection of the position must be made with a view to the requirements of these arms and also to the necessity of anti-tank defence. The foremost infantry position need not have a long field of fire, though a minimum of 100 to 150 yards is desirable.

The brigade sectors into which a position is divided will be sub-divided into battalion sectors, carried back from the most forward point of the defences to the rear of the position, in such a way that the troops holding each sector are distributed in depth and provide their own reserve.

7. Fire direction, fire control and fire discipline

1. To use the rifle, Lewis gun and machine gun to the best advantage it is necessary to understand fully their powers and limitations. However skilful individual men may

be in handling their weapons, efficient direction and control are necessary if the greatest effect is to be produced.

2. In action, the responsibility for deciding when first to open fire rests on the platoon commander subject to such orders as the battalion or company commander may have issued. In defence he normally arranges for the distribution and concentration of fire of his platoon; in attack these duties devolve on the section commander, in accordance with the orders of the platoon commander.

3. The infantry fire unit is the section, as it is the only unit which can be personally controlled by its leader throughout the battle.

The *fire unit commander* is therefore responsible for giving the executive words of command for the direction and control of fire but, at close ranges, or if the men are widely extended, the transmission of any fire order may be impossible. In such circumstances each individual man must control his own fire. The fire duties of the section commander are :—

- i. To select fire positions.
- ii. To indicate targets.
- iii. To estimate the range and, where possible, to order the necessary sight adjustments.
- iv. To decide the rate of fire ; deliberate or rapid.
- v. To observe fire.
- vi. To see that ammunition is not wasted.

(For details *see* Section Leading.)

4. In the attack, fire should not be opened unless it is found that satisfactory progress cannot be made without it. It must be remembered that a rapid advance has a demoralizing effect on the enemy and induces in him a feeling

that his fire is ineffective. Halting to fire, unless forced to do so, slows up the attack and leads to an expenditure of ammunition which may be urgently needed later on. Further, it must be remembered that, no matter how brave the troops, a fresh effort of will is demanded each time to leave the cover afforded by favourable ground in order to resume the advance.

In time, unless well supported by artillery or tanks, further progress may, owing to heavy casualties, become impossible; this means that superiority of fire has been temporarily lost and the infantry must then make every possible effort to regain it with its own weapons. Fire must be opened by those platoons or sections unable to advance so that they may once more be able to resume their forward movement and also in order to cover the movement of those troops on their flanks who are attempting, by manœuvre, to outflank the opposition.

5. In defence, ammunition supply usually presents fewer difficulties. Fire may therefore be opened at longer ranges if any advantage is to be gained thereby. It must be borne in mind that an early opening of fire discounts the possibilities of surprise and discloses prematurely the fire organizations of the defence; there may however be occasions, as for example in rear guard actions, when it is desired to compel deployment at long range.

Fire suddenly opened at short ranges has a particularly demoralizing effect on the enemy; for this reason it is often advantageous to seek for surprise effect by temporarily withholding fire.

Oblique and enfilade fire, coming as it generally does from an unexpected direction, has a great moral as well as material effect. Machine guns are particularly suitable for such fire,

because of the length of their beaten zones and the volume of their fire. For this reason machine-gun positions are usually sited in the defence to enfilade the enemy's probable lines of approach.

6. In deciding the volume of fire to be directed against a target a commander must take into consideration the tactical situation, the target, the range, the state of the ammunition supply and the effect it is desired to produce. The chief characteristic of the rifle is accuracy; its fire should therefore normally be delivered deliberately. The presence of automatic weapons in the platoon enhances the necessity for, and the value of, deliberate aimed fire from rifles. **Rapid fire should be considered only as a reserve of power to be employed when the occasion demands it.** It must combine accuracy with rapidity and never degenerate into an uncontrolled expenditure of ammunition. Wild, unsteady fire causes little or no loss and only tends to encourage the enemy by inducing in his mind a belief that his opponent is shaken; it is therefore worse than useless. Rapid fire may be necessary when it is desired to beat down quickly the enemy's fire; when covering the advance or withdrawal of other troops; when pursuing an enemy with fire; when meeting cavalry charges, or when good targets are exposed for a very short period. In the attack it may be used by covering troops as a final preparation for the assault by troops who have worked round the flanks. In the defence it may be used to beat off an enemy in the act of assaulting. It can also sometimes be employed to deceive the enemy as to the strength of the force opposed to them.

7. Every effort must be made to obtain the correct ranges. Observers will be employed, as necessary, to assist in the

observation of fire and to watch the enemy and neighbouring troops. To observe fire is the best means of rendering it effective. If uncertainty as to the correct distance exists, it is better to underestimate the range.

8. Skilful fire direction and control are, however, of little use unless the men are well trained in *fire discipline*.

Fire discipline entails strict attention to the signals and orders of the commander, careful adjustment of sights, deliberate aim and economy of ammunition. It demands of the men endurance of the enemy's fire even when no reply is possible and a cool and intelligent use of the Lewis gun and rifle when control by the fire unit commander can no longer be exercised.

8. Use of ground

1. The skilful use of ground assists surprise, conceals movement and enables losses to be minimized. In attack it enables troops to escape the full effect of the enemy's fire and possibly to approach close to his positions unseen : in a hasty defence the concealment afforded by natural cover is often more valuable than poorly constructed defences which are visible from the air and easily destroyed by shell fire.

2. Ground plays an important role in the offensive. If skilfully used it may often be possible, in wooded, close or broken country, for the attacker wholly or partially to conceal his approach and possibly to outflank or surprise the enemy. Fire may be necessary only when open spaces, exposed to the enemy's fire, have to be crossed. It must, however, be remembered that in close or wooded country progress will necessarily be slower than in the

open; direction and liaison between neighbouring units will be less easy to maintain, and co-operation between the artillery and infantry more difficult to arrange.

3. In the attack, the ground, air photographs and the map should be carefully studied in order to find:—

- i. Covered approaches by which it may be possible to get close to the enemy unseen.
- ii. Positions from which covering fire to assist the attack can be brought to bear.
- iii. Features, the occupation or capture of which will enfilade the enemy's position and enable a flank attack to be made under favourable circumstances.
- iv. Probable lines of advance of hostile tanks and the areas in which hostile tank counter-attacks are likely to be made.

4. In the defence in wooded, close or broken country the ground must be examined carefully to ensure that no area is left unwatched where the enemy could penetrate through the defences and so outflank them. The infantry in consequence will often be forced to employ more fire power than would be necessary in open country and special arrangements will have to be made for fire against the most probable lines of approach of the attacking troops.

In defence the ground should therefore be studied in order to find:—

- i. Facilities for observation, so that the enemy cannot approach unseen.
- ii. Positions difficult for the enemy to locate from the ground or the air.

- iii. Covered approaches in rear of the position which will facilitate counter-attack and supply.
 - iv. Areas defended by natural anti-tank obstacles and therefore inaccessible to tanks.
 - v. If cavalry is to be expected, areas protected by natural obstacles through which mounted action would not be possible.
5. If it is anticipated that the enemy may use gas, caution should be exercised both in attack or defence before occupying localities where gas will have special effect.
6. Some of the chief types of cover to be met with are :—
- i. *Undulating ground*.—This form of cover is the least obvious, and a high standard of training is required in order that its possibilities may be fully appreciated. When skilfully used it may secure immunity from fire as it affords no ranging mark for the enemy.
 - ii. *Shell-holes*.—These are particularly useful as positions from which to fire H.E. and smoke grenades and for machine guns.
 - iii. *Hedges and bushes*.—These afford cover from view but not from fire unless there is a ditch or mound behind them. In open country they may afford a good ranging mark to the enemy and are therefore dangerous.
 - iv. *Trees*.—If sufficiently thick, trees give protection against bullets. Isolated trees afford good ranging points for the enemy.

- v. *Sunken roads or the dry beds of streams and ditches.*—These afford valuable natural trenches which can be improved by burrowing into the bank nearest the enemy. On the other hand, the hard surface of a road increases the effect of shells bursting on it; roads are easy to range on. The danger of their being enfiladed must be particularly guarded against.
- vi. *Walls.*—They afford cover from view and fire but are apt to splinter. They are easy to range on.
- vii. *Standing crops.*—These afford good cover from view and are useful for concealing obstacles.

9. *The duties and position of infantry commanders in action*

1. A commander influences the course of the battle by the forethought he displays in his initial orders and, subsequently, by the handling of his reserve.

2. The duties of the infantry commander in action may be summarized as follows:—

- i. To be certain that he understands the wishes and intentions of his superior. Not only must he know his orders but he must also be sure that he knows the intention which lies behind those orders.
- ii. To make a sound tactical plan.
- iii. To aim at surprise by keeping the plan secret from the enemy, *e.g.*, by concealing dispositions, and by taking care that written messages or orders do not fall into his hands.

- iv. To decide how to distribute the troops in order to put into execution the plan which has been made.
- v. To maintain a reserve until the moment for decisive action arrives. The reserve must not be used piecemeal; when the original reserve has been committed steps must be taken, as soon as possible, to re-constitute another.
- vi. To exploit all tactical successes at once.
- vii. To consolidate the ground won and hold it against counter-attack.
- viii. Constantly to maintain contact with the enemy.
- ix. To ensure against surprise by taking adequate measures for protection both before, during and after an engagement.

3. In order to employ the initiative of subordinates to the best advantage it is necessary to decentralize command. A due sense of proportion will prevent a commander interfering in matters of minor importance which are the immediate concern of his subordinates. On the other hand, no superior commander is justified in shifting responsibility on to the shoulders of a subordinate on the pretext of allowing free play to the latter's initiative. Delegation to a subordinate of undue liberty of action is as fatal an error as undue centralization of authority.

Once the tactical plan has been made, and the necessary orders issued, subordinates must be left a free hand in carrying out their task.

Any attempt to exercise personal control over all portions of a command will inevitably lead to the neglect of other duties. Nevertheless there are occasions when a personal

example of bravery by a senior officer has a steadying effect and, in a crisis, every other consideration may have to be sacrificed to achieve this end.

4. Both in attack and defence a battalion commander should establish his headquarters near his battalion reserve, as by its correct and timely employment he will principally influence the battle. For similar reasons company and platoon commanders should be near their company or platoon reserve. Section commanders, being fire unit commanders, should place themselves where they can best control the fire and the movements of their sections.

5. **Not to be taken unawares must be the aim of all commanders in battle.** Everything in their power must therefore be done to foresee the various situations which may occur; prompt decision will then be easy and the necessary orders to put it into effect can be issued without delay.

10. Inter-communication and the passing of orders

1. Victory depends on skilful leadership and on hard fighting; but however efficient the commander may be, the issue by him of clear orders and the correct use of his reserve (Sec. 2, 3, v.) depend on good information from subordinates and on a reliable system of inter-communication.

2. All commanders are responsible for keeping their respective superiors, as well as neighbouring units and subordinate commanders, regularly informed of the progress of events and of important changes in the situation as they occur.

3. **A good system of liaison is essential to success in battle.** Commanders of all grades must remember that the

situation in war is nearly always obscure and that it is only by the most careful arrangements for the passing of information, both to higher authority and to the flanks, that the co-ordination of effort necessary for victory can be achieved.

Liaison is obtained by :—

- i. Orders.
- ii. Reports, either at stated intervals or as the situation demands, sent to higher authority.
- iii. Information sent by senior commanders to their juniors or else exchanged between neighbouring units.
- iv. Personal visits of commanders to each other. These visits do more than anything else to ensure close co-operation and a mutual understanding of each other's aims and difficulties.
- v. Detailing special officers for liaison duties.

4. Within the battalion, orders and messages in battle will be written whenever possible.

In mobile warfare the time necessary to prepare and issue orders in the form given in Sec. 61 will, however, seldom be available. In these circumstances they will be issued in telegraphic form and will be arranged in the sequence laid down in the above quoted section. Further, situations will often arise demanding rapid action, in which it will be necessary to issue orders by word of mouth. In such cases the importance of maintaining the correct sequence must not be overlooked. All orders should contain just so much information of the enemy and our own troops as may be necessary for the operation in hand, then the task and the general

manner in which it is to be carried out and, after that, detailed orders for the units to be employed.

The importance of issuing verbal orders in a firm tone of voice, and in a calm determined manner, cannot be exaggerated.

Verbal reports and messages must be kept as short as possible. The officer or orderly to whom a verbal report is given should be made to repeat it before he is despatched. The fewer the individuals by whom the message has to be repeated, the less chance will there be of errors creeping in. Verbal reports must be delivered, without hurry or excitement (*see* Sec. 147, Vol. I, 1926).

Duplicates of all written orders and a *précis* of each verbal report or telephone conversation should be kept.

5. It will generally be advisable for a battalion commander to detach a liaison officer with the necessary orderlies to a neighbouring unit to ensure that he is kept fully and constantly posted as to its movements and progress. This is especially the case when operating alongside a unit belonging to another formation or when the task allotted to his battalion in an attack is to pass through another unit on a given objective.

To ensure satisfactory results, liaison officers must be taken wholly into the confidence of their commanders and given full and constant information about the operations in progress.

6. As in battle other means of inter-communication are often impracticable within a battalion, it will usually be advisable for the company and machine-gun platoon commanders each to leave two orderlies with battalion headquarters. These men will be used to deliver urgent messages.

Similarly a battalion commander will send representatives of his battalion to brigade headquarters.

7. To ensure that no possible source of information is overlooked, all ranks should notice what takes place within their view and hearing and report anything of importance accurately and at once to their superior, who will pass it on to the higher commanders and to neighbouring units.

In the heat of battle the tendency of subordinate commanders is to forget the necessity for constantly sending in reports to higher commanders and to flank units. **The value of reports increases as the action progresses and the importance of rendering them frequently must be the constant care of every commander.**

11. *Use of smoke*

1. Smoke is used in war to obtain concealment with a view to effecting surprise or reducing casualties. It enables the attack to get to close quarters and to surprise the enemy from an unexpected direction. The tendency of an enemy, when a smoke cloud is put down, is to pour a heavy fire into it: this fact should be borne in mind when evolving a tactical plan which embraces the use of smoke (*see Manual on the use of Smoke*).

2. Smoke shell are fired by the artillery in order to :—

- i. Make a screen behind which the attacking troops can move unobserved.
- ii. Blind artillery O.Ps. and anti-tank weapons.
- iii. Mask defended localities and machine-gun positions.
- iv. Protect an open flank.

- v. Assist the attacking infantry in maintaining direction by marking objectives, or the boundaries between formations, or by indicating the new front when a change of direction is necessary.
- vi. Notify and co-ordinate the time for the resumption of an advance after a pause on an intermediate objective.
- vii. Prolong a front of attack and so induce the enemy to disperse his fire. Smoke can be usefully employed for this purpose on those portions of the front where it is not intended to press home the attack.
- viii. Conceal the forward move of reserves or the launching of a counter-offensive.
- ix. Cover a withdrawal.

3. The number of infantry smoke grenades is limited, a platoon carrying only sufficient to permit of one or two smoke operations without replenishment. Their use should therefore be restricted to those occasions, such as are likely to arise in the later stages of an advance, when concealment is really vital to the progress of the advance. A firm determination to make the best use of their weapons is demanded of troops who intend to rely on smoke, since they must be prepared to receive a lesser degree of the support usually afforded by the other arms.

The formation of a smoke screen requires very careful consideration; it is of no use merely to discharge it in front of the advancing infantry irrespective of considerations of wind and weather. It should be remembered that indiscriminate use of smoke is liable seriously to interfere with

artillery and air observers, reconnaissance during battle and visual signalling.

Smoke screens can be used effectively to :—

- i. Facilitate an advance over exposed stretches of ground.
- ii. Blind the enemy's machine guns.
- iii. Screen an assault.
- iv. Screen an open flank.
- v. Conceal a counter-attack. In this case smoke grenades should be fired just before the attack is launched ; if fired too soon they will only serve to draw the enemy's fire.
- vi. Cover a withdrawal.

4. Against an enemy using smoke to cover an attack, it is best to fire short bursts of cross fire from Lewis guns and machine guns on suspected lines of approach. Where possible patrolling should be carried out. Light signals are one of the best means of communication in the defence against an enemy using smoke.

CHAPTER II

ATTACK

12. *General considerations*

1. **Every commander must build up his plan for an attack methodically.** He must in the first place be clear in his own mind as to what he must achieve in order to carry out the orders or instructions he has received; he must then decide how he can best employ the troops at his disposal to attain his object.

In making this decision, he must give due weight to the following considerations :—

i. *Information.*—Information is required about the enemy's strength, dispositions and intentions and also about the ground over which the attack is to be made. This is obtained, principally, by the R.A.F. (reports, air photographs, &c.), and by the cavalry and leading infantry units which, by actual contact, seek to determine the strength of the enemy's resistance along the whole front.

It must continually be borne in mind that one of the gravest menaces to infantry in the attack is to be counter-attacked by tanks. Too great stress cannot be laid upon the importance of information concerning the number of these weapons which the enemy has at his disposal, their disposition and as to whether the ground is suitable for their employment.

Of primary importance too is the personal reconnaissance of commanders to determine the best use of the ground. In

this connection the commander responsible for the operation as a whole should take with him such artillery, tank and other commanders as may be operating under his orders in order that the close co-operation of all arms may be assured.

ii. *Surprise*.—The advantage of surprise in the attack is that it forces the enemy to fight under conditions which do not allow him to make full use of his fire power or his reserves : it throws him off his balance by forcing him suddenly to face the unforeseen.

It is achieved by :—

- (a) The secrecy with which the preliminary arrangements for the attack are carried out.
- (b) The sound application of the knowledge gained by reconnaissance, the aim being to strike when and where least expected.
- (c) The speed with which the attack is organized and carried out.

iii. *Economy of force—fire and movement—co-operation of all arms*.—A commander seldom has sufficient resources at his disposal to attack the enemy everywhere. He is, therefore, usually obliged to select a portion or portions of the enemy's position against which to make his main effort. The objective or objectives so selected for the decisive attack will usually include the localities of the greatest tactical importance and consequently those most strongly defended.

Since one of the main objects in the offensive is to force the enemy to disperse his fire resources as far as possible, the front of attack must be kept as wide as the resources will permit. To achieve this the strictest economy of force has to be exercised on those portions of the front where it is not

intended to press home the attack. These should be attacked with just sufficient fire power to prevent the enemy withdrawing troops, or fire, to reinforce the threatened sector. Smoke can often be usefully employed to leave the enemy in doubt as to the actual strength of the forces opposed to him (*see* Sec. 11).

The attacking infantry must be inspired with the determination to advance, in face of the fire and counter-attack by which the defence will endeavour to check it.

To make this possible superiority of fire must be gained and maintained on the frontage selected for the decisive attack; the extent of this frontage will, therefore, depend principally upon the fire power and the number of tanks which the commander can make available to support the decisive attack.

It is by fire that the counter-measures of the defence must be met, in order that the mobility of the attack may not be lost. Against certain natures of opposition, infantry, by the proper use of its own weapons, will be able to provide the fire power necessary to retain its mobility. Against organized defences, held by a determined enemy, the co-operation of other arms will be essential. It is the duty of commanders, in their several grades, to ensure that adequate measures for co-operation have been arranged.

Whatever is the allotment of troops to the different attacks the commander must always keep a reserve and be prepared to use it to meet the unforeseen and to exploit a tactical success without delay.

iv. *Exploitation of success.*—In warfare under modern conditions the defence is always distributed in depth, conse-

quently the key to decisive results lies in the prompt and energetic exploitation of every local success. Once a tactical success is gained it is essential to give the enemy no respite to organize further resistance. Speed is important; the initial plan of attack must therefore include preliminary orders as to the direction in which success is to be exploited, the designation of the troops for the purpose and the extent of the exploitation.

It may happen, however, that the greatest tactical success is obtained in an unexpected direction; if so the commander must take advantage of it and not hesitate to commit his reserve where the enemy is giving way, within the limits set by the higher commander.

v. *Control*.—The maintenance of control throughout an attack is necessary to enable commanders to confirm success or to retrieve failure.

Control is obtained by :—

- (a) The issue of clear orders in which definite tasks are allotted to definite bodies of troops and from which all arms may understand thoroughly what assistance they may expect from each other and what assistance they can give to each other.
- (b) The most careful arrangement for the collection and distribution of information throughout the attack. At all times subordinates must keep their superiors and neighbouring troops fully informed about the situation as they see it.
- (c) Maintaining all bodies of troops, at all stages of the attack, in as concentrated a formation as the fire of the enemy will permit with reasonable safety.

With this end in view, the orders for an attack must include the allotment of a definite series of objectives to each body of troops.

2. The nature of the attack and the extent of the preparations necessary for it will depend on the degree of resistance which the enemy may be expected to offer. The speed with which it can be prepared and launched will depend also on the intelligent anticipation of difficulties by the various commanders who, in both these respects, will have to rely largely upon the information furnished them by the troops actually in contact with the enemy.

The types of resistance may be roughly classified as :—

- i. *Unorganized resistance*.—This form of hastily prepared defence will be met in the encounter battle when contact is first gained with the enemy's advanced troops, or when his defensive positions have been broken through and the enemy has been given no time in which to prepare further organized defences.

In each case the enemy will probably be defending the ground in a series of localities with troops hastily brought into battle. Rapid and resolute action is therefore essential so as to make full use of the opportunities offered for manœuvre and penetration before the enemy has had time to bring up reinforcements and to organize more fully. Even against unorganized resistance, owing to the fire power of automatic weapons, the infantry will require the strongest possible assistance throughout every stage of the attack

from artillery and also from tanks, if available (Sec. 6, 5).

- ii. *Organized resistance.*—This is encountered when the enemy has had time to arrange a defensive position in depth. The strength of the position will depend on the amount of time and labour he has had at his disposal, which, in extreme cases, may have enabled him to prepare an artificial system of great strength, consisting of field works, wire entanglements, trenches, dug-outs, &c.

In this latter case to attack with hope of success, requires a deliberate and methodical preparation. The reconnaissance has to be very thorough, and careful staff arrangements have to be made for the massing of the artillery and the move forward to the assembly positions of the infantry and tanks.

3. Between these two extreme forms of resistance there are many varying degrees of preparation in which the enemy may be found and the amount of time necessary for the organization of the attack will vary to a corresponding degree. It must, however, be remembered by all commanders that **infantry cannot advance against even semi-organized resistance unless that resistance is kept under subjection by fire power, nor must it be launched against unbroken wire obstacles.**

4. The tasks which may be allotted to infantry in the attack are :—

- i. To gain a definite objective.
- ii. To maintain ground which has been won.

- iii. To exploit success.
- iv. To prepare for a further advance.

5. The governing consideration in the attack is to employ at the outset only the minimum numbers necessary to attain the immediate object in view and to retain the maximum force in hand to deal the decisive blow, to exploit success, or to meet an emergency such as counter-attack or failure. The troops must be imbued with the determination to close with the enemy without delay (Sec. 3. 3), and it must be remembered that, when once they are committed to the assault, they cannot be diverted from their allotted tasks.

Unless infantry is launched to an attack square to its objective, there is great danger that direction will be lost.

In the deliberate attack, when the enemy's strength will be fairly accurately known, the numbers committed to the attack at the outset can be calculated so as to ensure that the final objective can be held against probable counter-attack. In the encounter attack, on the other hand, reserves of fire power and tanks should, if possible, be held available to reinforce, if necessary the attacking troops on the final objective.

13. *The battalion in the encounter attack*

1. The encounter battle is divided into the following phases :—
 - i. The gaining of contact by the leading troops.
 - ii. The approach march of the remainder of the attacking troops to their assembly positions in rear of the troops already in contact.

iii. The attack.

iv. Exploitation of success.

v. Consolidation (organization for defence of the ground gained).

2. The *gaining of contact* in the first instance is the task of the mounted troops and infantry of the advanced guard. It is their duty to drive in the enemy's advanced troops, to test the resistance along the whole front and so supplement, by actual contact, the information obtained from the air. It is on the information so gained, both tactical and topographical, combined with the results of his own personal reconnaissance, that the commander makes his plan of attack. The advanced guard also has the further mission of covering the assembly positions of the troops detailed for the attack. To carry out its mission successfully the advanced guard must, therefore, be prepared to operate on a wide front. So far as the handling of infantry units in this phase is concerned, the tactical principles are the same as in any other attack except that the less time the enemy has had in which to organize his defence, the bolder can be the tactics and the wider the frontages of units.

3. Having received his orders, the battalion commander will proceed to put them into effect. The normal sequence in which he will act will be :—

i. To carry out a personal reconnaissance accompanied by his company commanders, machine-gun commander, and artillery and tank commanders if they are acting under his direct orders.

ii. To choose, if possible, a position of assembly from which the leading troops can debouch square to

the objective. When selecting this position he should consider how the approach march to it is to be carried out and whether the troops can assemble there out of the direct view of the enemy.

- iii. To decide upon the attack dispositions of the battalion, including the lines of advance and the allotment of objectives.
- iv. To determine how the artillery, machine guns and tanks, if co-operating, can best assist the advance.
- v. To decide the direction in which success is to be exploited, in accordance with any limits which may have been set by the higher commander.
- vi. To decide the general methods of consolidation.
- vii. To arrange the means of inter-communication, including liaison with adjacent troops, ammunition, supply, and medical arrangements.
- viii. To issue orders which must, if verbal, be confirmed in writing at the first opportunity.

4. In the *approach march* to the position of assembly the chief considerations will be concealment with a view to effecting surprise and the avoidance of casualties. In addition to this, steps must be taken to ensure security; the fact that other troops may be in action in front does not obviate this precaution, although naturally the numbers employed can be much reduced.

There are four methods by which the approach march can be carried out:—

- i. Moving deployed over the open.
- ii. Using covered approaches.
- iii. Dribbling forward in small parties.
- iv. Under cover of darkness.

When moving deployed (*see* Sec. 6) a battalion can advance on a front of 800 to 1,000 yards and in a depth of about 1,500 yards. It must always be remembered that there is a constant tendency for the troops in rear to close up on the head when a long advance under fire has to be carried out. Sufficient depth at the outset is therefore important if the power of manœuvre is to be retained.

The formation in which a battalion moves will depend on the amount of cover available on the line of advance, on the likelihood or otherwise of being surprised or attacked unexpectedly and on the security of the flanks. When making the decision the commander must take into consideration the fact that the position of assembly may come suddenly under the enemy's fire. It is therefore an advantage to move in a formation approximating to that which will be employed in the actual attack; only modifications in the intervals and distances between units will then be necessary before debouching to the attack from the assembly position.

5. Though situations in mobile warfare will often demand very rapid action, allowing little time for forming a plan and writing orders, it is important that a battalion should not be hurried into action except when this cannot be avoided. The expenditure of extra time on reconnaissance, on the issue of clear written orders and their explanation to company commanders, machine-gun platoon commanders, signal officer, &c., will nearly always be justified.

Every platoon and section commander must be clear in his mind as to the objective of his unit and, if the necessary time can be spared to explain it to the individual men, a greater determination to reach the goal will be present in all ranks than if they have only a vague idea of their task.

6. When ordered to carry out an attack a battalion commander must take steps to obtain as much information as is possible on the following points :—

- i. The general situation.
- ii. The enemy's defences and obstacles to movement such as wire, streams, marshy ground, &c.
- iii. The presence of hostile tanks and the direction from which tank counter-attacks are likely to be made ; as well as the assistance in dealing with such counter-attacks which is to be expected from friendly tanks.
- iv. Any troops who may be already in action in front and the units which will be operating on his flanks.
- v. The objective, limits of the front, and the assistance to be given by the other arms.
- vi. The general line on which his headquarters is to move.

7. A *battalion frontage* in the encounter attack will normally be 1,000 yards or less according to the difficulty of the task, but it can be increased, if necessary, up to 1,500 yards should the conditions demand the sacrifice of a certain amount of depth in order to increase the frontage.

8. *Nomenclature*.—In every attack the battalion will be divided into two echelons :—

- i. Forward companies finding their own reserves.
- ii. Battalion reserve, *i.e.*, the company, or companies and machine guns which the battalion commander retains under his own hand.

The duty of the *forward companies* when definitely committed to the attack is, with their forward platoons, to seek out and attack the enemy along the whole front allotted to them in order to penetrate his defences and gain the battalion objective. If unable to penetrate, the forward companies must endeavour, by relentless pressure, to pin him down and wear out his resistance in order to discover the most vulnerable portions of his defence.

It is only by the use of his *battalion reserve* that a battalion commander can influence the attack once it has been launched. To influence it effectively his battalion reserve must be as strong as the minimum requirements of the forward companies will permit. Kept back at the outset from the fiercest of the fighting and away from the demoralizing effect of surprise, to which the forward companies may at any moment be subjected, its employment at the right time and place will exercise a great influence on the battle.

9. *Use of the reserve.*—The battalion commander can use his battalion reserve :—

- i. To adjust errors in direction made by the forward companies, to fill up the gaps so made should they appear likely to compromise success, or to form defensive flanks.
- ii. To maintain the momentum of the attack and to gain the objective, should the forward companies have failed, either by a flank blow against the enemy's resistance or by replacing an exhausted forward company if he considers that the resistance is

likely to be overcome by attacking with fresh troops.

iii. To hold successive objectives during the advance of the forward companies serve as rallying points should the forward companies be driven back by heavy counter-attack.

iv. To exploit success during the attack, by exploiting a penetration made by one of the forward companies and, directly after the objective has been gained, by pursuit in order to take full advantage of any local disorganization of the enemy. The pursuit will be carried out relentlessly up to the limits set by the higher commander or until fresh troops have passed through.

v. To relieve exhausted troops should the attack definitely fail. In this case a fresh battalion reserve must be formed as quickly as possible.

10. The *distribution of the battalion*, as between forward companies and battalion reserve, depends on :—

i. The information available concerning the enemy, the strength of his defence, and the nature of the opposition to be expected.

ii. The strength of the enemy in tanks and the facilities afforded by the ground over which the attack is to take place for counter-attack by these weapons.

iii. Whether the ground, over which the battalion is to advance, is open or close.

iv. The frontage allotted, the objective or objectives and the depth to which the attack is to go.

- v. Whether the flanks are protected.
- vi. The importance of preserving the tactical unity of his companies.

11. *Suitable formations for a battalion in the early stages of the attack.*—The battalion commander's decision as to the distribution of his companies between forward companies and the battalion reserve, will depend upon the requirements of the forward companies (Sec. 12, 1. iii) as regards the front to be covered and the opposition to be overcome. **Whatever formation is adopted, there must be nothing in the way of geometric rigidity, elasticity remaining always the primary consideration.**

Plate I, Fig. 1 (Diamond), shows one forward company and three companies in battalion reserve. This formation may be used when the ground is very open, when little is known as to the opposition to be encountered, when the front is wide and the flanks exposed. Should the opposition prove serious, this formation can be easily developed into the formation shown in :—

Plate I, Fig. 2 (Triangle), without any disadvantageous inter-mixture of units. This formation is useful if the front is wide, the ground enclosed with many defended localities and if the defence has little depth. Its disadvantages are, however, that it sacrifices depth and therefore power to manœuvre.

Plate I, Figs. 3 and 4 (Square), show two companies as forward companies and two companies in battalion reserve. Such a formation, though more suited to the deliberate than the encounter battle, may be adopted when the defences are sufficiently strong to warrant the employment of two forward

companies at the outset and when the battalion front is a thousand yards or less. This formation sacrifices depth and is inclined to be rigid, but is useful when two definite objectives have to be captured, one by the forward companies and the next by the battalion reserve passing through them.

The reserve is liable to come under fire at the same time as the forward companies and, if the ground is open, it may be better to echelon it on that flank on which it appears most probable that it will be required. If immediately in rear of the forward companies frontal reinforcement would lead to an inter-mixing of units. Also, if one flank is exposed it is as well to have a company of the battalion reserve on that flank to meet a possible counter-attack.

Plate I, Figs. 5 and 6 (Square), again show two companies as forward companies and two companies as the battalion reserve, when the front to be covered is anything up to 1,500 yards. It is immaterial whether the two companies forming the battalion reserve move side by side or one behind the other. By making use of covered approaches the battalion reserve will be moved in as concentrated a formation as the accidents of the ground permit.

12. *Distances and intervals.*—No attempt can be made to lay down a normal distance to be maintained between the forward companies and the battalion reserve. The depths shown in the diagrams are only a guide and must be adjusted to the special circumstances of each attack. The battalion reserve should, however, be far enough in rear to retain its power of manœuvre, *i.e.*, to avoid the aimed small-arm fire directed at the forward companies and yet be close enough to be able to intervene in the battle, when required, without

delay. The companies composing it will therefore have to move by bounds, making the best use they can of the cover afforded by the ground: the distance will consequently vary from time to time. On the other hand, should the ground be deficient of cover, and lateral movement be likely to prove difficult, companies of the battalion reserve must be disposed in such a way from the outset that they can move frontally in the direction in which it is most probable that they will be used.

13. *Frontages*.—Only the forward company, or companies, will be allotted definite frontages which will be based on the difficulty of the task to be performed. Sometimes, owing to the lack of any well-defined dividing line on the ground, it will be possible to give only a general line of direction to each company in conjunction with the successive objectives each is to capture. Landmarks and compass bearings must always be given.

The fact that a definite frontage has been allotted to a company does not preclude it from using any covered approaches, if necessary, in the sector of any other unit always provided that it does not interfere with the attack of that unit.

14. *Employment of machine guns*.—The duties which may be allotted to machine guns in the attack are :—

- i. To cover by fire the advance of the attacking troops through every stage of the attack and, in particular, to apply concentrated fire upon localities which may check the advance.
- ii. To protect the flanks and to cover gaps between units.

- iii. To deal with counter-attacks and to hold the successive objectives won, upon which the forward companies can rally if driven back.
- iv. To provide a reserve of fire power.

To fulfil these various missions it is necessary to dispose the machine guns in depth :—

- (a) Forward guns whose role it is to work forward in immediate support of the leading infantry.
- (b) Supporting guns for covering fire, flank protection and the holding of successive objectives as they are won.
- (c) Reserve guns.

To ensure continuous support a constant interchange of role between forward and supporting machine guns will be necessary as the advance progresses. It is therefore best that they should operate under the direct orders of the machine-gun platoon commander. As a general rule, no machine guns should be sub-allotted to the forward companies.

15. *Artillery co-operation.*—During the early stages of the encounter battle, artillery fire is used to harass the enemy's columns moving along the roads, to interfere with his attempts to organize a defensive position, to scatter his observing parties and to blind his O.Ps. Once the infantry begins seriously to feel the effect of the enemy's machine-gun and rifle fire, concentrations of artillery fire are brought on to those localities and batteries whence the enemy is bringing effective fire to bear.

Limitations of time and ammunition will preclude the employment of extensive barrage fire. If, however, the

circumstances and resources warrant it; or, if the attack is held up on an extensive front by determined resistance, a form of covering fire on a timed programme may have to be used (*see* Sec. 5).

Sec. 5 also lays down upon whom the responsibility for liaison rests.

In order to direct and control the fire of his batteries the artillery commander should know:—

- i. The exact position from time to time of the infantry he is supporting.
- ii. What is the immediate objective.
- iii. What is the type of fire which is preventing the infantry attaining the objective, and where it is coming from.

The close support artillery acts under the direct orders of the infantry commander to whom it is allotted, and is used to engage, at short range, the localities which are holding up the attack (*see* Sec. 5).

16. *Co-operation with tanks.*—In the encounter attack tanks should not be launched to the attack until the forward companies have definitely located the enemy's localities. As soon as the commander under whose orders the tanks are acting decides that their co-operation is necessary, their employment will be governed by the following considerations.

The task of tanks acting in co-operation with infantry is to enable the infantry to advance by capturing positions or localities of tactical importance which are holding up the advance. To do this, each body of tanks (company or section) must be allotted a definite objective. Whether they advance frontally against the objective, passing through the

leading infantry, or approach the objective from a flank, will depend upon the ground and the possibility of affording them adequate artillery support (smoke, &c.); but, whatever their line of advance, their chief aim must be to deal with such opposition as is holding up, or is likely to hold up, the infantry advance.

As soon as the tanks have gained their objective and have established the infantry on it, they must be withdrawn to a previously selected rallying position under cover. In order that the tanks may not be exposed to the losses which an unduly long pause on the objective would entail, and in order that the enemy may not have time to recover from the fire and moral effect of the tanks, it is essential that the infantry should seize at once the opportunity to advance which the action of the tanks is calculated to present. This will normally be the task of the forward companies, but it is the duty of all bodies of infantry to seize this opportunity and to press forward and gain ground, whether ordered to do so or not. The closer the infantry can follow the tanks on to the objective the better; in any case, the tanks should not be required to remain on the objective for more than a few minutes.

The formation of tanks in the attack will be similar to that of infantry—*i.e.*, forward tanks followed by tanks in reserve. The maintenance of a tank reserve for the purpose of dealing with tank counter-attacks is essential.

While tanks are peculiarly suitable for enabling the infantry to advance by subduing the enemy's machine guns and dealing with his wire obstacles, the other arms (infantry and close support artillery) must do all in their power to assist the tanks in their task by dealing with the anti-tank weapons.

The closest co-operation between the various arms is thus essential to success, and the mutual assistance which they can afford each other must be fully exploited.

17. *Issue of orders* (see Chapter VIII).—Having carried out his personal reconnaissance, and having decided in his own mind on his plan of attack and the way in which the other arms placed under his orders will co-operate, the battalion commander will issue his orders.

In the encounter attack time will often be too pressing to admit of full written orders being issued ; orders will therefore frequently be issued verbally and confirmed in writing as soon as possible. When issued verbally orders should be in the same form as when written. Even so, it is always advisable to issue notes in writing on the following points at the same time as the verbal orders are given out : objectives, time at which the artillery fire opens, hour of the infantry advance, any particular light signals, &c., and the route by which battalion headquarters is to move.

In issuing orders, whether verbal or written, the following points, so far as they are applicable to the particular attack, will be included :—

- i. Information regarding the enemy, his dispositions, and obstacles to movement, whether artificial or natural.
- ii. Information as to the position and intended action of troops on the flanks or in front.
- iii. The allotment of objectives, frontages and tasks to the companies and the machine-gun platoon. Landmarks and compass bearings to assist direction will be given.

- iv. The assembly and forming up positions for the companies and how they are to be reached.
- v. The action of the other arms in immediate support.
- vi. Time at which the attack is to start—*i.e.*, the time at which the leading troops are to pass a pre-determined line, usually called the “starting line.”
- vii. Orders for consolidation, the direction in which, and the units by whom, success is to be exploited.
- viii. Medical arrangements. The position of the aid post and advanced dressing station will be given.
- ix. Ammunition supply.
- x. Rations.
- xi. Position of battalion headquarters before, during, and after the attack. The battalion commander should, if possible, move with his reserve. The positions will be chosen from observation of the ground or from the map or air photographs, and, if later on found unsuitable, orderlies will be left at these positions to receive and pass on messages.
- xii. Signalling arrangements. The means of communication may include visual signalling, wireless, orderlies and lights.

18. *Conduct of the attack.*—The task of the infantry in battle is to carry through the attack from objective to objective throughout the whole depth of the hostile defences. The objectives are selected from a study of the enemy's defensive organization gained from air photographs, personal observation, &c. To avoid mistakes it is an advantage if localities which are easily recognizable on the ground are chosen.

Between the main objectives the attacking battalions may have to carry out a series of minor attacks in the nature of bounds in order to capture any subsidiary defences; the control of these bounds must be maintained by the battalion commander in accordance with the general plan of the higher commander. **The attack is, therefore, a methodical progression from objective to objective, involving a succession of assaults, constantly delayed for the purpose of re-organization and of clearing the captured defences, and also by the necessity of replenishing ammunition and readjusting the fire plan.**

19. As stated in Sec. 12, 1, the extent of the frontage selected for the decisive attack will depend upon the fire power available to support it. The number of guns at the disposal of the commander will often be only sufficient for a concentration of fire on a portion of the front of attack. On this front the attacking troops must move as closely as possible under the protection of the artillery fire and by this means drive home their attack; but on other portions of the front of attack the absence or weakness of the artillery support must not deter the attacking troops from making every effort to advance and close with the enemy under the fire of their own weapons. It must be remembered that the objectives against which the heaviest fire is brought to bear will probably be the most important tactically and therefore the most strongly defended; opportunities may frequently occur on other portions of the front for the infantry to get forward by a skilful use of the ground and its own weapons. It is only by the whole-hearted determination of junior infantry leaders to gain ground on every opportunity that the enemy can be prevented from strengthening the

defence at the points where the attack is being pressed home.

20. *Reconnaissance during the attack.*—Throughout the attack it is the duty of the battalion commander to keep himself fully informed, both by reports and by his own personal observation, of the progress made by his forward companies. The information so gained must be passed back to the brigade commander and to the battalions attacking on his flanks. He must also constantly keep in mind the danger of counter-attack and, by the skilful placing of his reserve, ensure that everything possible is done to meet such an eventuality under the most favourable conditions.

21. *The battalion reserve.*—A time may come in the attack when the whole, or a portion of the forward companies are unable to make further progress. In other words, superiority of fire will have been temporarily lost either because the troops are too weak owing to casualties or owing to an error in the numbers deployed in the first instance, or because unexpected defences have been discovered which have not been adequately dealt with by artillery fire. The battalion commander will then have to decide how best to employ the whole or a portion of his reserve in order to accomplish the task which has been given to him. If possible, he will aim at holding the enemy frontally with the troops already in action, whilst he attempts to strike him on the flank; on the other hand, the extent of the defences may be such that there is no open flank within his sector, and in this case he will select some portion of the front where he considers that an effort by fresh troops, adequately supported, will achieve success. This effort should be made where the attack is progressing rather than where it is held. Whatever

he decides to do he will be responsible for ensuring that the covering fire is sufficient to make further movement possible and for selecting the objective ; this done, the method of execution will be left in the hands of the company commander or commanders who have to carry out the plan.

If, on the other hand, only a portion of the forward companies is held up, the battalion commander should follow with his reserve in the wake of the forward company that is still making progress and move through the gap thus made. By this measure he will be in a position to exploit successive gains and to maintain the momentum of the attack.

22. *Replacement of forward companies.*—When the intervention of the battalion reserve has been successful, and the resistance which is holding up the attack overcome, the forward companies will reorganize and continue to advance to their objective. If, however, the forward companies or any portion of them are unduly exhausted, and the battalion commander considers that further strong resistance will be encountered before this objective can be reached, he may deem it advisable to replace them from his battalion reserve in order to maintain the momentum of the attack. The forward companies thus replaced will re-form and become the battalion reserve.

23. *Exploitation.*—When the objective of the battalion has been gained, the battalion commander must seize the opportunity to push forward beyond it and gain further ground, provided that such action is in conformity with the intentions of the higher commander and that the troops are still capable of further exertions. Care must be taken not to over-estimate the capacity of a battalion in this respect : a battalion which is over-taxed is an easy prey to counter-attack and suffers a considerable loss of morale, which takes time to restore.

In coming to his decision he should take into consideration the effect such advances will have on neighbouring units, and he should not attempt to reach positions the maintenance of which would entail reinforcement or the undue advance of flanking units. For such further advance organization similar to that required for the original attack may be necessary, in which case time will be required to make the arrangements for artillery support, &c.

Subject to due weight being given to these considerations, the final objectives for a battalion should be fixed at the furthest limit to which it is likely to maintain the vigour of its attack, according to the conditions of ground and the estimated strength of the enemy's resistance.

24. Should his resistance definitely break down and his troops show signs of demoralization, the enemy must be given no respite in which to reorganize and establish a new defence. The troops actually in contact must follow him, and the battalion commander must launch his reserve in pursuit without waiting for such other troops (infantry, cavalry or tanks) as the higher commander may be able to provide.

25. When exploitation is no longer possible, or when the limit set by the higher commander has been reached, the battalion will organize the captured position for defence in depth in accordance with the principles laid down in Sec. 22. The consolidation will be carried out on a definite plan forming part of the arrangements made for the attack by the higher commander. After a successful attack there is usually a short period of quiet, during which minor adjustments can be made: even so, the careful organization of a defensive system cannot usually be carried out in its entirety until nightfall.

The first duty of the battalion commander is to select a temporary defensive position for the battalion, which should be co-ordinated with those of the battalions on either flank. Only the minimum numbers necessary for its defence should be employed and reliance largely placed on the cross-fire of machine guns disposed in depth. As many companies as possible should be brought into battalion reserve to rest and reorganize in preparation for a further advance or to meet a counter-attack. When the enemy is known to be in possession of tanks, the occupation and preparation for defence of localities which of themselves constitute anti-tank obstacles (woods, &c.), will at this stage of the battle be of great importance.

The artillery and machine-gun fire available to cover the battalion front will be arranged to support the garrisons of the localities selected for defence, some field or pack artillery being pushed forward to meet and defeat a counter-attack supported by tanks should the possibility of such an attack exist. Patrols with Lewis-gun sections will be sent out by the commanders of the forward companies to keep touch with the enemy and to cover consolidation.

14. *The company in the encounter attack*

1. *Issue of orders.*—The company commander will base his orders on those received from the battalion commander. They will usually be an extract from battalion orders augmented by such additional details as are necessary to put the latter into effect. When time is pressing they will have to be issued verbally, and it will be found of assistance

if a rough sketch of the dispositions can be given. To prevent mistakes, in the event of casualties to commanders, it is advisable to issue written instructions on such important points as the hour of the attack, any special light or success signals, company objective, &c.

The company commander's orders will include the tasks allotted to his platoons and their distribution. He will also explain the general method by which he proposes to carry out the task and any arrangements which have been made regarding the company's particular support by artillery, machine guns, tanks, smoke or aeroplanes. He will also give instructions as to his position during the attack which will usually be with his reserve.

Landmarks must be pointed out and the compass bearing of the general direction of the attack given. Loss of direction has to be guarded against, as men will almost invariably attack in a direction perpendicular to the cover in which they have been sheltering and will also tend to follow natural folds in the ground, hedges, &c.

In many cases the information at the disposal of a company commander may be very meagre and the situation in front very vague. In such circumstances he should not look too far ahead in making plans and orders but should allot intermediate objectives to his forward platoons. He will then be able to maintain control of the attack by reorganizing and allotting fresh objectives. In other cases the information at his disposal may be so definite as to enable him to make more detailed plans, allotting more distant and definite objectives to platoons in his initial orders.

2. *Information.*—Before deciding what dispositions are

best suited to the task in hand the company commander must consider the following points:—

- i. The information he has about the enemy and in particular about his machine-gun dispositions.
- ii. The extent of front he has to cover.
- iii. Any covered lines of advance or obstacles to movement (wire, marsh, &c.).
- iv. How he proposes to capture the enemy's defences and to use his reserve.
- v. Whether his flanks are protected by other troops: if not, how he intends to echelon his reserve so as to deal rapidly with a possible counter-attack in flank.
- vi. The covering fire to be afforded by the artillery and machine guns and the action of the tanks if they are co-operating.
- vii. The number of forward platoons he will require in order to ensure the necessary weight of fire power being available when wanted. This will depend largely on the amount of artillery and machine-gun fire available to support his attack.
- viii. The importance of preserving the tactical unity of his platoons.

3. *Distribution in initial stages.*—The initial distribution of the company must be in depth so as to retain the power of manœuvre.

The frontage which a company can cover in the encounter attack will be between 400 and 600 yards, depending on the anticipated strength of the hostile defences, whether the ground is open or close, and the fighting strength of the

platoons. The whole front need not be occupied. Platoons must be kept in hand and the company commander will allot definite objectives and tasks to each. Gaps do not matter as long as the ground is cleared of the enemy.

A company in the attack will be divided into :—

- i. Forward platoons.
- ii. Company reserve.

The formations in which it may be disposed in the early stages of the attack are shown on Plate II. Nothing in the nature of geometric rigidity is intended and these formations may be modified to meet any special situations.

Fig. I (Diamond) shows a suitable formation when the ground is open, the enemy weak, and when little is known about the probable resistance to be encountered. Only one platoon is employed as a forward platoon, the company being disposed in considerable depth so that the commander retains great power of manœuvre. This formation is very flexible should a change of direction be necessary.

Should heavy opposition be encountered it can quickly develop into the formation shown in :—

Fig. 2 (Triangle) which can be usefully employed when the frontage is wide and the ground enclosed so that the enemy is well protected by cover. In these circumstances the company will have to develop a large volume of fire with its own weapons early in the action in order to advance, and this formation is suitable for that purpose.

The formation shown in Figs. 3 and 4 (Square) is the formation normally used in the attack by a company with its flanks protected by other troops and adequately supported by artillery and machine guns, or tanks. When opposition sufficiently

serious to necessitate further deployment is encountered, the fire power of the two forward platoons can be immediately developed and with two platoons still in his company reserve, the company commander is able to retain the power of manœuvre of his command for a considerable period. Should a flank be exposed, either one or both of the platoons in company reserve may be echeloned on the exposed flank.

When the ground over which the advance is to be made affords sufficient cover, the two platoons in company reserve will be kept in as concentrated a formation as the accidents of the ground permit and it is immaterial whether they move side by side or one behind the other.

4. *A company in battalion reserve* can employ any of the formations described above or modifications to suit the special requirements of the task allotted to it. Normally it will not be called upon to open fire; it should, therefore, move in a formation, which will minimize the risk of casualties, permit it to be easily controlled by the company commander, and which will only require minor adjustments to enable it to carry out an outflanking movement or a frontal advance in direct support of the forward companies. Although a company in battalion reserve acts under the orders of the battalion commander, its commander must not hesitate to engage it without further orders in case of necessity, to cover an open flank, to stop a counter-attack, &c. The company commander must endeavour to place himself where he can observe the progress of the forward companies, easily direct the advance of his own company, and where he can communicate with battalion headquarters.

5. *Conduct of the attack.*—The company should, by the speed of its advance, aim at establishing a moral

superiority over his opponent and so induce in the latter the feeling that he is powerless to check the impetus of the attack. **Infantry should therefore not stop to open fire with its own weapons unless forced to do so to establish the fire superiority necessary to maintain its mobility.**

6. In the preliminary stages of the attack companies, whether acting as forward companies or battalion reserve, will be moved in as concentrated formations as the enemy's fire will permit without undue loss, so that the personal control of the company commander may be maintained as long as possible and that every advantage of cover may be taken. As a company approaches the enemy it will be necessary for it to be opened out gradually into a wider and looser formation until finally the time comes to extend the sections and bring every weapon into action.

7. The forward platoons of a company, forming part of the forward companies, will advance on their objective supported by the fire of such artillery and machine guns as may have been allotted to gain and maintain fire superiority; they will, when necessary, make full use of their own weapons to enable them to continue the forward movement throughout the attack, and finally to close with the enemy.

8. The task of the forward platoons is to capture the company objective, if necessary by the delivering of an assault, and when the objective is captured, to hold the forward edges of the locality while the platoons in company reserve clear it up. If a further objective is to be captured the company commander may find it advisable to replace one or more of his forward platoons from his reserve in order to maintain the vigour of the attack.

If, on the other hand, the forward platoons are unable, despite the use of their own weapons, to close with the enemy they must pin him to his ground by fire and attempt to discover the weak points in his defences. The company commander will then use his reserve to push through where the resistance is weakest, and thus turn the flank or flanks of those portions of the defence which are holding up the advance: should this be impracticable he must attempt to regain superiority of fire with a view to enabling him later to resume his own advance or to assist the advance of other troops.

9. Should a forward platoon become engaged in clearing up a small post in the enemy's defences which is still holding out, while the platoons on either flank have been able to advance beyond it, the company commander must push one of the platoons from his reserve past it, through either of the gaps thus made in the defence by the successful platoons, in order to replace the platoon which is engaged in clearing up. The latter platoon will then reorganize as soon as it has completed its task and follow on as part of the company reserve.

10. The distance at which the company reserve follows in rear of the forward platoons depends on the cover available and the importance of keeping the reserve out of the fire aimed at these forward platoons. The constant care of the company commander should be to keep a reserve as long as possible, but he must not hesitate to use the whole of it should this be necessary to gain superiority of fire, to drive the enemy out of a locality by a flank attack, to repel a counter-attack or to exploit a success.

11. If forced by circumstances to use the whole of his

reserve the company commander must attempt to re-constitute it by withdrawing into reserve any platoon or platoons which have suffered heavily, and by collecting men who have become temporarily separated from their own units.

Should the company commander find that a further advance is impossible he must develop the whole fire of which his unit is capable so as to facilitate the advance of the troops on his flanks; he must then resume his own advance at the first possible moment. When his whole company is finally absorbed in the fight he must take immediate steps to inform his battalion commander, while doing everything in his power to prevent his company becoming definitely held up.

If, on the other hand, the company commander should meet with rapid success, and an opportunity, in his opinion, presents itself for the effective employment of the battalion reserve, it is his duty immediately to inform the battalion commander of the situation, giving him particulars as regards covered lines of advance and possible objectives.

12. When success can no longer be exploited, or when the limit set by the higher commander has been reached, the company commander will organize the position in depth in accordance with the orders issued by the battalion commander. Patrols will be sent out to maintain contact with the enemy; should the latter be disorganized the patrols will act with the greatest boldness until such time as the battalion reserve or other troops can take up the pursuit.

15. *The platoon in the encounter attack*

1. The platoon is the smallest unit which can be divided into inter-dependent bodies each capable of fire and manœuvre. It is thus the unit on which all infantry tactics are based.

2. *Issue of orders.*—The platoon commander will base his orders on those he receives from his company commander. Normally they will be issued verbally and will include :—

- i. Information about the enemy's dispositions, entrenchments and obstacles to movement.
- ii. Information about the troops operating on the flanks.
- iii. The objective.—Landmarks will be pointed out to assist in maintaining direction.
- iv. The dispositions of the various sections, the tasks and the formation in which the platoon will move.
- v. The nature of the assistance which the platoon may expect from the artillery, machine guns, tanks, smoke, &c.

3. *Distribution.*—The initial distribution of the platoon will be in depth and its maximum frontage at war strength should not exceed 200 yards. The aim of the platoon commander should be to adopt a formation which will minimize losses and enable him to maintain personal control and make the best possible use of the weapons at his disposal. He must not engage more men than are necessary to attain the immediate object in view.

4. *Formations.*—The formations which can be adopted depend on the special requirements of each problem, the nature of the ground, the strength of the opposition, &c. They will vary with the number of sections which the platoon commander decides to employ as forward sections and the number he decides to retain in platoon reserve.

One forward section, Plate III, Fig. 1 (Diamond), will often be sufficient when the ground is open, the enemy weak,

and when little is known about the strength of his defences. By retaining three sections under his own hand, the platoon commander will be able to dispose his command in greater depth and thus retain his power of manœuvre.

When the platoon frontage is wide it will be necessary to employ two forward sections, Plate III, Figs. 2 and 3 (Square), with a gap between them if necessary, to cover the front. The sections in platoon reserve should then be disposed in readiness for instant manœuvre, and the platoon commander must avoid, if possible, placing them directly in rear of the leading sections, as direct frontal reinforcement will lead to an undesirable inter-mixture of fire units. When the ground over which the advance is to be made affords sufficient cover to enable the sections in reserve to be moved in a concentrated formation it is immaterial whether the two sections in platoon reserve move one behind the other or side by side, and they will advance over that portion of the platoon frontage which affords the best cover.

Occasionally three sections may be employed as forward sections, Plate III, Fig. 4 (Triangle), and only one retained by the platoon commander as his platoon reserve. This formation might be used when the front is wide or the country very close, affording a great deal of cover for the defence. It possesses the disadvantage of restricting the platoon commander's power of manœuvre.

5. When the enemy has not been definitely located *scouts* will, as a rule, precede the platoon at a sufficient distance to guard against surprise.

Should the flanks be exposed, it may be desirable to push out scouts to the flanks, but they should rejoin after deploy-

ment, as the formation of the platoon will then in itself ensure security from surprise on the flanks. Once the platoon is deployed, the responsibility for the employment of scouts devolves upon the section commanders (*see* Sec. 16, 3).

6. *Position of platoon commander.*—The platoon commander will move where he can best control the action of the whole of his platoon: before deployment at the head of his platoon, after deployment usually with the section or sections he has kept as his platoon reserve.

7. *Objective.*—When time is available the objective should be explained to each section commander and to every individual man, for by this means the determination of the men to reach the objective will be increased. The platoon and section commanders must also ensure that every weapon of the platoon is used to the best advantage to attain the object in view.

8. *Covering fire.*—The fire to make movement possible in the face of strong opposition is supplied primarily by the machine guns of the attacking infantry itself and by the artillery and tanks; the lack or weakness of covering fire from these weapons does not absolve platoons from making every endeavour to advance under their own fire power. Moreover, as communication with the supporting artillery cannot under the most favourable conditions be immediate, local situations will constantly arise with which the fire of the platoon weapons alone can deal promptly.

9. *Covering fire within the platoon.*—The movement of the forward section under the enemy's fire must therefore be covered by the fire of the sections in platoon reserve, if possible from positions on the flanks. The platoon commander should arrange for this covering fire in his initial plan and

orders, the sections in reserve being given definite targets. Section commanders must also open covering fire on their own initiative whenever a good opportunity presents itself.

When the situation demands it and the ground permits of their effective employment for the purpose, Lewis guns may be used to provide covering fire for the forward rifle sections during the critical phase of the attack, until the advance of the latter masks the fire of the Lewis guns. If, owing to the adequate provision of covering fire from other weapons, the fire of the Lewis-gun sections is not required in the later stages of the attack, these sections should join the rifle sections in the final assault. Whichever role is allotted to the Lewis guns, Lewis-gun sections should act as a whole, and once the assault has succeeded will find their special task in repelling counter-attacks.

10. *The conduct of the attack.*—The aims of the platoon and section commanders should be :—

- i. By a skilful use of ground, to advance as close as possible to the enemy's position without undue loss and without having to check the speed of the attack by opening fire (*see* Sec. 14, 5). When a further advance is no longer possible, except by the use of their own weapons, to continue to push boldly forward towards the objective by a skilful use of fire and movement. A platoon or section which is in a position to advance does so under the covering fire of neighbouring platoons or sections, whereas a platoon or section which finds itself temporarily unable to move, owing to the strength and accuracy of the enemy's fire, develops the

maximum fire it can to cover the advance of its neighbours. Whilst the object of each platoon or section is to advance from one fire position to another, it may be necessary to carry this out by one or more rushes, which must be done as rapidly as possible, though it must be remembered that the longer the rush, the easier it is for the enemy to bring his fire to bear upon the attacking sections with effect.

The rushes should, as a rule, be made by complete sections, rising from and dropping into cover quickly and as nearly as possible simultaneously.

- ii. To attempt to penetrate between the localities held by the enemy, blinding them by smoke grenades if necessary. It must be remembered that a defended post or locality cannot develop a great weight of fire in every direction at the same time. The tactical skill of platoon and section commanders in the attack is, therefore, largely shown in using lines of advance which are not swept by the enemy's fire, and in using fire and movement to attack the enemy from two directions simultaneously.
- iii. Having thus penetrated to close quarters, and having overwhelmed the enemy's fire (or possibly caused him to retire) to carry out the assault with the whole platoon.
- iv. After the assault, as on any other opportunity, the platoon commander must reorganize the men in his vicinity as quickly as possible.

11. The success of the platoon in the attack depends on close co-operation between the sections inside the platoon and

co-ordination of effort with the platoons on either flank. The platoon commander must therefore constantly watch the enemy's movements and report at once to the company commander and to neighbouring units if anything of importance is observed.

16. The section in the encounter attack

1. The section commander is the fire unit commander.

His duties in attack are:—

- i. Personally to lead his section, to choose his line of advance, to maintain direction and to adopt the most suitable formation in accordance with the existing situation.
- ii. To carry out the orders of his platoon commander.
- iii. To co-operate with the sections on his flanks and to assist them with fire whenever he sees the opportunity to do so.
- iv. To choose fire positions, to direct the fire of his section, to maintain good fire discipline, to prevent a waste of ammunition, to see that the ammunition from casualties is collected and to observe the fire of his section.
- v. To keep in close communication with his platoon commander.
- vi. To lead his section in the assault.
- vii. To maintain contact with the enemy.

2. Formations.—The formation in which the section will advance depend upon considerations of control, fire direction, vulnerability, and ground. The different formations are

single file, file, extended line, and arrow head (*see* Section Leading). Where control is the dominating consideration file or single file is the best; for fire production from all weapons, the extended line or arrow head is the best.

The section commander is responsible for selecting the formation best suited to the special circumstances of the situation. He must, however, avoid deploying into an extended line until forced to do so by the accuracy of the small-arm fire of the defence. Once extended, his power of control of his section and the ability to make the best use of the available cover is to a certain extent sacrificed. He should therefore seize the first opportunity of getting his section in hand once more.

3. *Security*.—In the preliminary stages of the advance the section normally moves as a whole in long bounds, using concealed approaches and any cover the accidents of the ground may afford.

The section commander is responsible for the security of his section at all times and must arrange :—

- i. To prevent the section being surprised.
- ii. To locate and report the position of the enemy.
- iii. To obtain information as to topographical obstacles on his line of advance.

When the section formation does not in itself provide protection, the employment of *scouts* (*see* Sec. 148, Vol. I, 1926) may be necessary. When the enemy has not been definitely located, scouts will, as a rule, be sufficiently far ahead to prevent their section being surprised or unexpectedly tied to their position by fire. Subsequently, greater caution will be necessary and the scouts and their unit may be com-

pelled to work by "bounds." Once contact has been definitely established it will often be advisable to withdraw the scouts altogether in order that they may not mask the fire of their section.

Sections on an exposed flank will send out scouts to watch that flank.

When employed, scouts should work in pairs to inspire mutual confidence, to be in a position to consult one another and to enable one to remain in observation of the enemy whilst the other signals or goes back with a report to their section. The scouts should be given definite objectives to reach. When employed on reconnaissance they should only use their rifles in self-defence.

The duty given in iii above will be performed by *ground scouts* moving at sufficient distance ahead of their unit to prevent it being committed to, or held up by any obstacles upon its line of advance. These ground scouts should be withdrawn as soon as the reason for their employment no longer exists.

4. Throughout the attack the section commander will select and point out successive halting-places prior to each advance, and he must see that the men place themselves in positions from which they can use their rifles or Lewis guns effectively. He will seldom, if ever, have the opportunity of firing himself except in an emergency such as a counter-attack.

By skilful use of ground, combined with good fire direction, the section works its way forward to within assaulting distance of the enemy. In the final stages the enemy's fire will become wild or else will die away; complete fire superiority will then be with the attacking troops and the moment for the assault

will have arrived. As soon as the objective has been gained, it will be quickly cleared of the enemy and the retreating enemy pursued by fire. The section commander will immediately get into communication with his platoon commander and with the neighbouring sections. The section will at once be reorganized in readiness for a further advance and will meanwhile be disposed in the best position to meet a possible counter-attack.

5. If at any time a soldier loses touch with his section commander, it is his duty to place himself under the orders of the nearest officer or N.C.O., irrespective of the company or battalion to which he may belong.

No man is permitted to leave his section in action to take wounded men to the rear, or for any other purpose whatever, without special orders.

17. *The deliberate attack*

1. The deliberate attack is dealt with fully in Sec. 77, *et seq.*, F.S.R., Vol. II, 1924.

Its main characteristics are the increased strength and depth of the enemy's defences and the more detailed knowledge the attackers will possess of the enemy's dispositions and organization as compared with the similar conditions before an encounter attack. The higher commanders can exercise little personal control after the attack has once been launched, and success therefore depends largely on the care with which the initial plan and the detailed arrangements for the attack have been made.

2. Time plays an important role in the deliberate attack ; the great strength and depth of the enemy's defences will entail the collection of large resources in artillery and tanks and

detailed reconnaissances before the infantry can be launched. The orders are usually very detailed and are preceded by a series of preliminary conferences and instructions (*see* Sec. 78, 5 F.S.R., Vol. II, 1924).

3. The infantry *assembly positions* should be under cover, so that the men can rest and have a hot meal before moving forward to the forming-up position. The distance between these two positions should be kept as short as possible.

4. The forward move from the assembly to the forming-up position should be made by a covered approach or else under cover of darkness or mist.

Should it be necessary to cross open ground in daylight, the men should be dribbled forward in twos or threes if time permits, and in such a way as not to attract the enemy's attention. Such a method of advance places the enemy in a quandary, as constantly firing at small parties of men results in an expenditure of ammunition which will be required later on, and the number of casualties inflicted will be few. Where time is pressing, the advance will be made in an approach march formation.

Ample time should be allowed, if possible, for this forward move, and guides should be furnished to lead platoons to their positions. When a covered approach is available platoons may pass in turn along the same approach at definite intervals.

5. The *forming-up position* must not be visible to the enemy. If neither trenches nor suitable cover exist it will be necessary for the attacking troops to be brought up during the night and the assault launched about dawn.

The forming up position should be as close as possible to the enemy's position, so that the attacking infantry may be

exposed to his fire for the minimum time. If the zone of the enemy's protective barrage is known, the position should be chosen clear of it.

The position should be square to the objective and should run along an easily recognizable feature, such as a ditch or path, or else should be marked by tapes or wire. As tapes can be seen from the air, they should not be left out in daylight.

The hostile patrols must be driven in before the troops are brought forward to the forming-up position or the advantages of surprise will be lost and the enemy will commence counter-preparation.

6. In choosing the line of attack more weight must be attached to considerations which facilitate the action of the supporting arms and less to the possibility of cover, which plays an important role in the encounter attack.

7. When tanks are not available gaps have to be cut in the enemy's wire by the artillery and mortars. This entails the disadvantage of a preliminary bombardment and precludes the possibility of complete surprise. Once the gaps have been made the infantry is responsible for preventing the enemy repairing them: constant patrolling, Lewis-gun and machine-gun fire are necessary.

8. In the deliberate attack the infantry depends principally on the other arms to produce the fire necessary to cover movement. It must therefore keep as close as possible to the bursting shells of the artillery barrage, and realize that the danger from an occasional short shell is negligible in comparison to the risks run by following too far behind it. The object of the barrage is to produce a curtain of fire along the front of attack, so as to enable the assaulting infantry to

deal with the defences encountered before the enemy has an opportunity to man them.

Under favourable conditions the barrage may advance at the rate of 100 yards in two minutes for the first few hundred yards, the pace being later reduced to 100 yards in three minutes, whereas in difficult ground, or among strongly organized defences, the speed may be fixed as slow as 100 yards in eight minutes. The rate of advance will not therefore always remain constant throughout the attack.

On occasions portions of the forward companies may lose the barrage owing to meeting unexpectedly strong resistance or unforeseen and unbroken obstacles being encountered. When this occurs the infantry must fight its own way forward with its own weapons and such supplementary means as are immediately available until such time as it can once more overtake the barrage.

When *tanks* are employed the leading infantry must follow them on to the objective as closely as possible.

9. The forward platoons should usually be distributed with the rifle sections leading. It will be the duty of the Lewis guns to protect the flanks of the rifle sections and to deal with any machine guns or riflemen who emerge from cover after the forward sections have passed on.

10. In the deliberate attack against organized defences it is generally advisable to use the "leap-frog" method. The garrisons are usually strong and the defences require careful clearing up; the companies in battalion reserve will take the place of the forward companies in due course, the latter then passing automatically into battalion reserve. A further advantage of this method is that defence in depth against counter-attack is automatically provided for.

11. Communication trenches will be cleared by troops moving above ground on either side and shooting down into them. It is fatal to the momentum of the attack for infantry to attempt to fight their way through trenches.

12. Every body of infantry, after capturing the objective assigned to it, will consolidate and reorganize, in readiness to repel any counter-attack.

18. *Raids*

1. A raid is an attack with a strictly limited and temporary objective, in which the attacking party returns to its own positions after achieving its object.

The cardinal principle on which the plans for a raid are based is that it should cause the enemy greater losses than those suffered by the raiding party. The operation, therefore, must take the enemy by surprise, and must be so timed that the troops will be back in their own trenches before the enemy has recovered from his surprise. It can be used in position warfare to harass and thus weaken the morale of the enemy; to take prisoners for intelligence purposes; to obtain definite information on particular hostile defences or to destroy them. Its greatest value lies in finding out the identity of the opposing units and in gaining information about the enemy's intentions.

2. To be successful, raids must be planned in great detail and raiding parties should, when possible, rehearse the operation on a facsimile of that portion of the enemy's trenches which it is intended to raid.

No definite rules can be laid down for the execution of raids, since their purpose and local conditions vary widely. Surprise is essential to their success. Artillery assistance will

usually be given in the form of a short, sharp bombardment which will lift as the assault is made and then form a protective barrage in front and on the flanks of the raiding party. The plans must include arrangements for the withdrawal of the raiding party on completion of its task. Although the whole operation should be carried out in accordance with a pre-arranged time-table, arrangements must also be made, if necessary, for a signal for withdrawal. The infantry who have remained in position and the artillery will cover the withdrawal of the raiding party.

3. If the main purpose of the raid is to secure information by the capture and identification of one or two of the enemy's soldiers, this object may sometimes be achieved more easily and with less loss by the use of fighting patrols.

4. The troops taking part in a raid must carry no badges or papers of any kind by which they can be identified should they fall into the hands of the enemy.

CHAPTER III

DEFENCE

19. *General considerations*

1. To stand on the defensive entails a temporary sacrifice of the initiative with all the consequent disadvantages. The enemy is given a free hand to choose the time and place of his attacks, and the defender is consequently left largely in ignorance of the plans and dispositions of his opponent; not until the opportunity to launch a counter-offensive under favourable conditions is created can the defender hope once more to impose his will on the enemy and achieve victory.

It follows that a commander must make every effort to seize and retain the initiative, for once it is lost he will be forced to adopt a defensive attitude. If defensive operations are prolonged, position warfare may develop, and to achieve victory under such conditions may prove a long and arduous business.

There are nevertheless occasions in war, as pointed out in Sec. 1, 4, when a defensive attitude may be temporarily necessary or even advantageous.

2. When a commander decides to stand on the defensive his action will be governed by four main factors, whatever the size of the force :—

i. *Time*.—To accept battle under the most favourable conditions time is necessary for the organization of the defences, so that the available fire-power can be used to the best advantage in conjunction with the natural and artificial

strength of the position. The aim of the defence should be to gain this time by the skilful handling of advanced troops, by demolitions on the main lines of approach, and by the concealment of defences (works, artillery positions, fire plans, &c.), so as to make the task of reconnaissance as difficult as possible for the enemy.

ii. *Fire.*—**Fire is the predominant feature in modern war.** It has been emphasized in the preceding chapter that superiority of fire in the attack is essential to success: conversely, the aim of the defence must be to retain the power to use its weapons effectively. It is on fire that the defence relies to stop the attack and to create the opportunity for counter-attack. The problem, therefore, which confronts the defender is to induce the enemy to disperse his fire resources and to subject him in turn to the full weight of the weapons of the defence.

If sufficient time has been gained to enable an organized position to be prepared the enemy will be forced to employ an artillery barrage: in other words, he will be obliged to disperse his fire by applying it to areas of ground instead of concentrating in turn against individual defences.

Moreover, if the defences have been strengthened by wire, the enemy will be compelled either to concentrate tanks to crush these obstacles or to sacrifice the important factor of surprise by destroying them by artillery fire.

On the other hand, in mobile warfare a defensive position may have to be occupied hurriedly: in this case time and resources may prove insufficient to enable elaborate defences, which will be proof against bombardment, to be organized in depth. It can be accepted as an axiom that so long as infantry remains unshaken by artillery fire or tanks it can, given good

visibility, repulse an attack with its own weapons. Concealment from aircraft and protection from artillery fire and tanks are therefore of great importance in a hasty defence of this description, and every endeavour must be made to mislead the enemy as to the positions actually occupied. Natural cover must be used as far as possible for the siting of defensive works and the intervening open ground should be protected by flanking fire. Dummy trenches may also be usefully employed to assist in inducing the enemy to disperse his fire.

It is clear that defensive dispositions are subject to modifications according to the time available for preparation and according to the weight of artillery fire which it is anticipated the attack can produce. The greater the weight of the artillery fire which may be brought to bear by the attack, the greater must be the depth of the position; the main infantry defences should be sited out of direct view from the enemy's artillery observation posts. On the other hand, against an enemy known to be weak in artillery, or during the early stages of defence in mobile operations when he has not had time to concentrate large artillery resources, some depth may be sacrificed, if this is considered advisable, with a view to giving the infantry weapons of the defence full play.

iii. *Surprise.*—Surprise is as important in defence as in attack.

The attacker aims at surprise in order to prevent the defender from making full use of his fire power or his reserves. The defence must, in consequence, do everything possible to avoid being surprised and to minimize its effect should the

enemy succeed in delivering a surprise attack, supported by tanks, without a preliminary bombardment.

Constant watch must therefore be kept on the enemy by means of *observation* and *patrols* to give warning of attack and to defeat minor enterprises. This demands most careful arrangement for the collection and transmission of information both before and during the battle. To localize the effects of a successful surprise attack, *depth* is essential, in order that all the defences in one sector may not be overwhelmed by fire or over-run by tanks at the same time. With this object *concealment* is necessary and the defences must be so sited as to keep the enemy in ignorance of the exact positions held, while every advantage is taken of existing anti-tank obstacles such as streams, woods, marshes, &c., which can be fitted into the general scheme of defence.

It must be remembered that though the initiative rests with the attacker, the defender can more easily conceal his dispositions and intentions, because movement is less essential to the defence than the attack. It is upon such *concealment* that the chances of achieving surprise in defence depend. The organization of the fire plan must not be prematurely disclosed, and the attackers must be induced to advance into areas in which they may be caught unawares by fire. It will be by these means that opportunities can be created for the delivery of counter-attacks by surprise.

iv. *Control*.—These counter-attacks should be delivered by troops specially allotted for the purpose and in such directions as the commander, after careful thought, may have decided are the most favourable. The attacker must be prevented from anticipating the identity and location of the counter-attack troops and to ensure *control* they must be assigned definite tasks.

20. *General organization of a defensive position*

1. To understand the problems which face junior commanders in the defence it is first of all necessary to have a clear conception of the general principles on which all defensive positions are built up.

Whatever the reasons that underlie the assumption of a defensive attitude, the position should be organized methodically from the outset on a comprehensive plan so that the time and labour available may both be used to the best advantage: preparations can then proceed systematically from the early stages of hasty defence to fulfil the requirements of a highly-organized position.

2. The circumstances which may necessitate the assumption of the defensive are varied, and are as follows:—

- i. Owing to the strategical or tactical requirements of the situation (*see* Sec. 1, 4). In this case a commander will generally foresee the need to assume the defensive in good time and will be able to reconnoitre, select a position and organize it thoroughly.
- ii. As a temporary measure during mobile warfare, as, for example, an advanced guard covering the deployment of the main forces preparatory to an attack.
- iii. During certain phases of the offensive, such as the consolidation of the various objectives, whilst awaiting the arrival of reinforcements in men or material, or whilst waiting for offensive operations on another portion of the battlefield to make themselves felt.

- iv. When caught by the enemy at a disadvantage in the encounter battle and thrown suddenly on the defensive. Under these conditions it may often be less costly for infantry to maintain its position until nightfall, rather than to attempt to break off the fight and withdraw under fire in daylight.

In all the above situations, other than i, it is to be expected that the frontages allotted to formations and units will, at the outset, be wide in proportion to the numbers available to hold them. In these circumstances, depth will have to be sacrificed to some extent in the initial stages: it will, however, be gradually regained as the defences become better organized and the intensity of the enemy's artillery fire increases.

3. The development of a defensive position by a force of all arms may gradually evolve through the three different phases enumerated below or else it may begin at one of the two later stages according to the general tactical situation and the time and resources which the commander of the force has at his disposal.

The various phases are:—

i. *The preparatory phase.*—At this stage the principal requirement will be *information*. It will be the responsibility of the air force and the advanced troops to discover the direction of movement and the strength of the hostile columns; the main forces should not be deployed until the enemy's line of advance can be foreseen. A force which is kept in hand, covered by the necessary protective troops, can assume the offensive at once should a favourable oppor-

tunity present itself or, alternatively, can dispose its troops in a defensive position to the best advantage with a view to accepting battle.

ii. *Organization of a defensive position in mobile warfare* (See Plate IV.)—The first consideration will be to determine the general line in front of which it is intended to stop the attack. All the defensive preparations must be made to ensure the development of sufficient fire power to stop the enemy in front of this line, and to have reserves immediately available to drive him out should he, nevertheless, succeed in gaining a temporary footing in it.

Resources will seldom permit of a position in mobile warfare being held strongly throughout its entire length, nor will it usually be possible to organize more than one zone of fire defences. The available resources must therefore be concentrated on the defence of those tactical localities, the retention of which is vital to the maintenance of the general line referred to above. A definite body of troops will be allotted to the defence of each locality, the strength of the former depending upon the size, natural strength and importance of the latter. Each locality should be organized for all-round defence and within it the troops should be distributed with due regard to concealment, in positions from which they can best develop the fire power of their weapons. Defended localities should be capable of affording each other mutual support by flanking or enfilade fire, and the artillery and machine guns of the defence should be sited to cover the approaches leading to them and between them.

Behind the defended localities, reserves should be distributed to give depth to the defence, to ensure protection of the

flanks of the forward localities, and to counter-attack should the opportunity occur.

If the defence has been well organized parties of the attacking enemy may be induced to press forward into avenues between two defended localities. The opportunity will then present itself of annihilating them with fire or by counter-attack.

In advance of the position outposts will be placed to guard against surprise while the position is being prepared. Their composition will depend upon the strength and proximity of the enemy: but they should be sufficiently strong to delay him until the position is occupied.

Fire and communication trenches should be dug as time permits. In open country it may be necessary to dig dummy trenches as quickly as possible, connecting up the various defended posts so as to render their identification difficult.

iii. *Defence in position warfare.*—(See Plate V.)—When a defensive attitude is maintained for a considerable time it is to be anticipated that the enemy will, sooner or later, concentrate powerful forces of artillery, mortars and other mechanical means of destruction against the position occupied. Distribution of the defence in depth is, therefore, of added importance: firstly, because the suddenness and weight of the attack may be such that it will shatter the more forward defences which are exposed to concentrated artillery and mortar fire, and secondly, because it tends to conceal the actual dispositions of the defenders and so reduces losses.

The position is therefore organized into:—

- (a) *A forward or covering zone*, the depth of which will depend upon the ground, the proximity and

armament of the enemy and the strength of the garrison. It must be sufficiently in advance of the main zone to protect the latter from a preliminary bombardment by the enemy's mortars. Its object is to keep a constant watch on the enemy, to give warning of attack, to defeat minor enterprises and, in the event of a heavy attack, to absorb the first shock.

It is usually organized in an observation line of well-concealed sentry groups supported by a chain of defended posts with a series of defended localities in rear.

- (b) *A main zone*, which comprises the area in which the commander intends to fight out the battle and break the enemy's attack. It is therefore the keystone of the whole defensive system. **The front line of the main zone will usually be the line in front of which it is intended to stop the enemy's attack.**

Frequently the conditions will not be those of either mobile or position warfare, but will be an intermediate stage between the two types; the methods employed will consequently vary according to the degree in which the situation approximates to the one or the other. The defence in mobile warfare may gradually evolve into position warfare, and the original defensive zone in the former may later become the forward zone in the latter, whilst the localities, &c., held by the reserve may be developed into the front of the main zone. When the original defensive dispositions make this possible of achievement the one type of defence

gradually merges into the other, and the whole organization is developed methodically as time permits.

4. The following are the main considerations which should govern the selection and organization of a defensive position:—

- i. The general line in front of which it is intended to stop the attack (*see* Sec. 20, 3, ii) must be selected sufficiently in advance of ground suitable for observation to provide adequate protection for the zone of observation posts which the artillery requires. It must also be selected with due regard to the provision of adequate artillery positions from which the localities comprising it can be covered.

In deciding upon the actual localities to be held full weight must be given to the importance of having natural anti-tank obstacles (woods, rivers, marshes, &c.) for their protection.

- ii. The system on which the artillery and machine-gun fire plans will be co-ordinated must receive early and careful attention as it is upon the fire power of artillery and machine guns acting in co-operation that the defence primarily depends to stop the enemy's advance.
- iii. The allotment of sectors to brigades and to battalions. The dividing lines should, as far as possible, be denoted by easily recognizable features and should be carried from the most forward point of the defences back to the rear of the position. Any important tactical feature, such as a valley or a ravine, should be wholly included in one sector, special arrangements for

its defence, by means of a concentration of artillery or machine-gun fire, being made by the responsible commander.

- iv. The siting of the defended localities in relation to the artillery and machine-gun fire plans. These localities will be disposed in depth and will afford each other mutual support. As time is gained they will be connected up by fire and communication trenches. In this connection a programme will be drawn up showing the sequence in which the wiring and general strengthening of the position will be carried out.
- v. The placing of reserves in positions where they can best use their weapons and from which they can deliver a counter-attack or be launched on a counter-offensive. In the opening stages of mobile warfare, as already pointed out, they will organize a second series of defended localities which may gradually become a portion of the main zone should position warfare develop.

21. The battalion in defence

1. In this section it is proposed to consider the problem which faces a battalion commander in the defence in mobile warfare; the same principles underlie the defence in position warfare, but they are easier to apply owing to the time it is generally possible to spend in considering the problem in all its aspects.

2. As soon as a battalion commander has been allotted his sector by the brigade, and has been given his orders,

he will move his battalion forward to a position in rear of the sector which it is to occupy. This position will be chosen, if possible, screened from air observation and measures will be taken for its local protection by the allotment of temporary alarm posts to the various companies and by the posting of the anti-aircraft Lewis guns.

A covering party will also be sent out to give warning of any possible attack while the reconnaissance of the position is being carried out, and subsequently while the troops are moving forward to occupy it. This task will usually be carried out by patrols including Lewis-gun sections and by means of observation posts placed on commanding ground. The fact that other troops are known to be operating in front will not absolve the battalion commander from this responsibility although the numbers employed on the duty may be sensibly reduced.

In carrying out his personal reconnaissance he will generally take with him his company commanders, his machine-gun platoon commander and any other commander who may be acting under his orders.

3. The battalion commander will base his plan of defence on the orders he has received from the brigade as regards the organization of the artillery and machine-gun fire, on a study of the map, on the result of his personal reconnaissance of the ground and on the knowledge he possesses about the enemy.

4. In carrying out his *personal reconnaissance* of the ground the problem must be studied carefully from the enemy's point of view in connection with his own proposed dispositions. The following points should therefore be borne in mind :—

- i. The existence of any concealed approaches which the

enemy may attempt to use in order to approach the position.

- ii. Whether there are any obstacles (including natural anti-tank obstacles) in front of the position which will interfere with the enemy's advance and the places where he will have to pass them.
- iii. What portions of the ground it is essential to hold strongly so as to sweep effectively the probable lines of approach which the enemy will use in the attack.
- iv. The facilities which the ground offers for counter-attack and any points which must be regained if they fall into the enemy's hands.

5. After carrying out his personal reconnaissance the battalion commander will proceed to draw up his *plan of defence*. The thoroughness with which this can be done will depend on the time at his disposal. The importance of simplicity must always be borne in mind. **A commander must be clear as to the line in front of which he means to stop the enemy. He must remember that a scheme based on sound principles is more likely to succeed than one which attempts to foresee and to frustrate every possible move the enemy may make.**

The following points must be considered :—

- i. What is known of the enemy and of his most probable line of attack.
- ii. The plans for the action of friendly troops operating in front or on either flank, and the missions allotted to the reserve in the hands of the brigade or higher commander.

- iii. The tasks allotted to the artillery and machine guns, any special work to be undertaken by the engineers, and any missions allotted to the R.A.F. or tanks which may affect the battalion.
- iv. The general dispositions of the battalion as between forward companies and battalion reserve which will vary according to the frontage and the depth of the sector allotted. The general direction and the objectives of any counter-attacks to be delivered by the battalion reserve will also be considered.
- v. Any special precautions to be taken for defence against tanks, gas or aircraft.
- vi. The preparation of defence works, their order of priority and the allotment of tools. The importance of concealment in the initial stages of the preparation of a defensive position will be taken into consideration, and every possible ruse must be used constantly to mystify, mislead and surprise the enemy.
- vii. Light signals to be employed and the system of inter-communication to be established inside the battalion.
- viii. The location of the battalion aid post, the system of ammunition supply, and the procedure to be adopted for the evacuation of prisoners.
- ix. The position of battalion headquarters.

6. Fire is the predominant factor in a successful defence ; every commander must therefore organize his fire plan as thoroughly as the conditions and resources at his disposal permit so as to use his artillery

machine-gun and infantry fire in co-operation to the best advantage.

The machine gun is the most valuable of all the weapons used in defence against infantry ; so long as it is in action the area of ground swept by its fire is rendered practically impassable by infantry (*see* Sec. 3, 10). The artillery fire plan, the siting of the infantry defence works, and the placing of wire obstacles, if available, must therefore all be co-ordinated, as far as possible, to force the enemy into the arcs of fire of the machine guns. Direct fire must be regarded as their principal role, and they should be sited in sections or sub-sections in positions from which they can bring fire to bear for at least 500 yards to their front.

When it is likely that the enemy will employ tanks in the attack, the most important consideration in siting infantry defence works may be the natural anti-tank obstacles afforded by the ground.

The tasks of the artillery in defence include counter-preparation, counter-battery work, anti-tank defence, co-operation with the other arms in repulsing the assault, and co-operation in counter-attacks (*see* Sec. 5, 9). In mobile warfare the artillery of the defence is seldom strong enough to put down a curtain of fire along the whole front and the amount of ammunition available is usually insufficient to enable fire to be maintained for long periods. The artillery will therefore normally be employed to search certain definite lines of approach which it is anticipated the enemy will use and which cannot readily be dealt with by machine-gun or rifle fire. The infantry will be responsible for stopping the leading troops of the attack, they may be assisted by the artillery, but the latter will often be better employed dealing

with the troops following up in rear and sometimes with the reserves. It must be remembered that an area of ground swept by artillery fire is not impassable by infantry, nor can artillery fire be opened as rapidly as that of infantry.

The siting of the defended localities must be so co-ordinated with the machine-gun fire plan that the two together can form a continuous belt of small-arm fire in front of the position. The ground between the different localities should be covered by flanking small-arm fire, but in darkness or fog it may be impossible to ensure that this fire is properly directed. Troops who are closely engaged have a tendency to fire direct to their front and to overlook, in the heat of action, the flanking mission which has been allotted to them. For these reasons it is advisable to assign important enfilade tasks to machine guns. These machine guns should be sited behind ground affording concealment from the front and should be protected by the dispositions of the other troops.

7. The *frontage* which may be allotted to a battalion depends on the ground, on the enemy, on the condition of the troops and on their task. In normal circumstances a battalion can occupy an area of ground of about 1,000 yards square which can be increased up to a frontage of about 1,500 yards on occasions: but the increase in frontage will entail some reduction in depth.

8. The *formation* in which a battalion is distributed will vary according to the extent of front it has to occupy. It will depend upon the cover afforded by the ground and upon whether the battalion is detailed to act as a forward battalion or is held in brigade reserve.

Forward battalions will be disposed in defended posts held by sections, or defended localities held by platoons or

companies. A defended locality includes several defended posts so disposed as to afford each other mutual support.

Battalions in brigade reserve must also be allotted positions from which they will be able to bring fire to bear, should the forward battalions be over-run. These positions must be selected with a view to the employment of the battalions in brigade reserve for counter-attack. To enable them to counter-attack with any prospect of success they must be kept more or less concentrated and completely mobile, in order to retain their power of manœuvre. It is therefore essential that the positions allotted to them and the routes thereto, should be most carefully reconnoitred, in order that they may be manned with the least possible delay, as soon as it is known that the battalions will not be required for counter-attack.

As the first duty of all troops in defence is to stop the enemy by fire, both the battalion headquarters and the battalion reserve of the forward battalions must be allotted fire positions which they will defend in the event of the forward companies being over-run or in the event of their flanks being turned. When selecting the fire positions for the companies in battalion reserve it must be remembered that at least one of these companies may be required to carry out a counter-attack. The principles laid down for the selection, reconnaissance and occupation of their positions are exactly the same, therefore, as those already given for the positions of the battalions in brigade reserve.

If the defended localities occupied by the forward companies are sited on the reverse slope, out of direct view of the enemy, and the forward slopes cannot be adequately observed from positions further in rear, observation posts will be necessary

on the forward slope. The number of posts required will depend on the difficulties of observation over the ground in front and will be left to the discretion of company commanders; as these posts cannot be adequately supported from the defended localities in rear they may be ordered to withdraw in case of attack to previously selected positions within the defended localities.

9. *Counter-attacks* are of two kinds :—

- i. *Deliberate*, carried out by the brigade, or sometimes by the battalion reserve. The deliberate counter-attack requires time for organization and the co-ordination of all arms in accordance with the principles laid down in Chapter II.
- ii. *Immediate*, carried out by the battalion or company reserve. The immediate counter-attack is the best method of preventing the further advance of the enemy and of driving him out from any locality he may have captured. It must be carried through with great resolution. The opportune moment requires careful judgment and quick decision on the part of the officer detailed to lead it.

In order that they may be launched as a surprise and with the speed necessary to success, counter-attacks demand the most detailed preparation of which the circumstances admit. All units in reserve must therefore study carefully any ground over which they may be ordered to counter-attack and, should there be time, it is an advantage if the contemplated operation can be rehearsed beforehand.

10. *Anti-tank defence* is assured, whenever possible, by

siting the defences in rear of obstacles which are impassable to tanks and, on all occasions, by guns specially detailed for the purpose (*see* Sec. 5, 9, iv.). The position of these guns must be selected in relation to the defended localities held by the infantry; the concealment of their emplacements is very important as, if located, the enemy will attempt to neutralize them by artillery fire and smoke. They must therefore remain silent until the last moment and then engage the tanks at the most favourable range.

A proportion of tanks should, if possible, be allotted to those parts of the front where a tank attack is considered likely. The role of these tanks will be to engage, by immediate counter-attack, any hostile tanks which may succeed in penetrating the defences.

11. *Conduct of the defensive battle.*—The first indications of an impending attack of any importance will usually be observed by the R.A.F. and by the mounted troops operating in front, if the latter have not already been driven in. In mobile warfare, however, it does not necessarily follow that the attack will be delivered along the whole front (*see* Sec. 12). On receipt of a warning from the brigade of a possible attack, the battalion commander must forthwith do everything in his power to find out if the enemy is massing in front of him, both for his own information and for that of higher authority.

He must re-double his vigilance by increased offensive patrolling with a view to capturing prisoners, to driving in the enemy's patrols and to finding out the exact area in which the enemy is forming up.

12. Once definite information is obtained that the enemy is massing opposite his sector he must immediately notify

the brigade commander so that counter-preparation by the artillery, and harassing fire by machine guns specially detailed for the purpose, can be opened against the forming-up areas and the routes leading up to them.

13. No effort must be spared to find out the moment the enemy leaves his forming-up area ; this is especially important when a tank attack is expected as the enemy will attempt to effect surprise by dispensing with a preliminary bombardment. It is often advisable to leave out boldly handled patrols provided with pre-arranged light signals so that the earliest possible information can be obtained to enable the fire plan of the defence to be put into operation without delay.

14. Once battle is joined all ranks must understand that the troops allotted to the defence of a post or locality are responsible for holding it at all costs and for inflicting the greatest possible loss upon the enemy. The fact that a neighbouring post or locality is captured must under no consideration be considered a reason for withdrawal in order to conform with a consequent re-adjustment of the line (*see Sec. 2, 4*).

15. Throughout the action the battalion commander must keep in the closest touch with the other arms, especially the artillery which is directly supporting him, and he must also keep the brigade commander and adjoining unit commanders constantly supplied with information. He must also maintain touch with the situation on his flanks by every available means.

16. Should the enemy gain a partial success, but be finally stopped inside the sector held by a battalion, the battalion commander will organize a defensive position on the ground still held and will immediately launch counter-attacks

with his reserve and such artillery support as is available in order to eject the enemy before he has had time to consolidate; in these operations he will be assisted by fire from those posts and localities which are still holding out.

Troops driven out of their defences are seldom capable of putting up any further effective resistance until they have had an opportunity to rally and reorganize in rear of other troops still in position. Similarly, it is generally useless to send up fresh troops to reinforce those falling back in the hope that between them they will be able to stop the advancing enemy. The best way of stopping an enemy who has met with success is by launching an immediate counter-attack.

22. *The company in defence*

1. It has been pointed out in Sec. 20, that the defence in mobile warfare and in the consolidation of a newly captured position differs from the deliberate organization of a defensive position in position warfare. In the first two cases the primary considerations are concealment and the establishment of a zone of defended localities, affording each other mutual support by flanking fire and protected as soon as possible by a wire obstacle. In the third case the enemy will be forced to bring up considerable material resources in the form of artillery and tanks and his air and other reconnaissances must also be very detailed if he is to hope for success; the distribution of the defence will be in great depth, including a forward zone and a main zone, and the troops will be protected by deep trenches and dug-outs so as to minimize the effects of a heavy bombardment.

2. In mobile warfare a company commander will be

allotted an area of ground on which to organize a defended locality. On receipt of orders from his battalion commander he should proceed in the following manner :—

- i. Make certain that he understands fully the artillery and machine-gun fire plans, the approximate position of the defended localities on his flanks and, if his is a forward company, whether any forward O.Ps. are required.
- ii. Ensure that the front allotted to him is adequately protected by patrols, or O.Ps. on commanding ground if the country is open, during the period of his personal reconnaissance, and during the occupation and organization of the locality by his company.
- iii. Place his company in a position concealed from the air pending the result of his personal reconnaissance and arrange for anti-aircraft Lewis-gun defence and for temporary alarm posts in the event of sudden attack.
- iv. Carry out his personal reconnaissance taking with him his platoon commanders.

3. The reconnaissance of the ground is often considerably simplified if it is examined from the enemy's point of view. The solution of the attack problem will frequently supply the key to the best fire plan for the defence (*see* Sec. 20, 4).

4. The *disposition* of the troops in a defended locality should be in depth and the company commander must, unless the front allotted to him is too wide or in certain cases when in battalion reserve, keep a reserve in hand for immediate counter-attack or to meet the unforeseen. Provided a good view of

the ground over which the enemy has to advance can be obtained by the artillery and machine guns the defences of the forward companies need not necessarily have a long field of fire. Surprise is important in defence and this is, in a certain measure, secured if the main defences are hidden from ground observation. On the other hand, when the enemy's artillery fire is known to be weak, it is an advantage to have a long field of fire so as to make full use of the rifle and Lewis gun. A minimum field of fire of 100 to 150 yards is, however, all that is necessary in mobile warfare and this distance can be sensibly reduced in position warfare when the defences are protected by strong wire obstacles. Equally in mobile warfare the company commander must place a wire obstacle in front of his locality as quickly as possible. If the main defences of the locality are sited on the reverse slope, and a good view to the front cannot be obtained from the flank, observation to the front will be secured by the establishment of a chain of small O.Ps. on the forward slope, by means of patrols, and by listening posts in fog or mist.

These O.Ps. must not, however, be placed so far forward that they can be attacked or raided without the garrison of the locality being aware of the fact. Immunity from shell fire and raids depends largely on concealment; their positions must therefore be constantly changed and alternative positions occupied at night to those occupied in daylight.

The duties of the personnel at the O.Ps. on the forward slopes are:—

- i. To keep a constant watch over all the ground in their immediate front.
- ii. To check all movements of small bodies of the enemy in daylight by accurate sniping. It is, however,

often an advantage to employ the best shots in the company on sniping duties from specially selected points and so minimize the risk of giving away the position of the posts.

iii. To afford the necessary security to the garrison of the defended locality to enable the men to rest by day and to work undisturbed at night or in fog.

iv. To stay where they are unless or until ordered to withdraw.

5. The method in which a company is disposed in a defended locality will depend on the ground, on the front to be covered and on whether the flank is open or not. It may, however, be taken as a rough guide that a company can defend a front of 500 to 600 yards; any further extension will necessarily entail a sacrifice of depth.

The company will be distributed in the locality allotted to it in defended posts held by sections and in defended localities held by platoons, so disposed as to afford each other mutual support by fire.

Companies in reserve will usually be distributed in platoon localities as such a distribution will admit of easier control by their commanders.

No guide can be laid down for the depth in which the locality will be organized, as this necessarily varies according to the frontage and the ground. The position of the platoon or platoons in reserve should be chosen so that:—

i. The men can use their weapons effectively in the event of the forward defences being over-run.

- ii. They are sufficiently far in rear to prevent them being involved in the shelling aimed at the forward defences.
- iii. The garrison can counter-attack effectively.

When the plan of defence includes a counter-attack to take place under certain conditions, the direction in which the platoons in company reserve are to counter-attack and their objective must be clearly defined by the company commander, who will ensure that, where possible, the platoon or platoons detailed for the purpose rehearse the operation in all its details beforehand. Care must also be taken that gaps are left in any wire obstacles erected to enable the counter-attack to pass through. Company headquarters will normally be with the reserve. As opportunity offers the various posts will be joined up by fire and communication trenches.

6. The locality must be held to the end even if the localities or posts on either flank have been over-run by the enemy. The distribution of the company in depth should be such as to ensure that the flanks of the most forward localities and posts are protected by fire from those in rear.

Should the attack break down under the fire of the defence an opportunity may be presented for an immediate counter-attack; if so, this opportunity should be exploited without delay before the enemy has had time to reorganize.

All ranks must understand that a determined resistance which inflicts heavy losses on the enemy but which gives ground gradually is not a defensive battle; it is a retreat.

7. The dispositions of a company in battalion reserve will not differ materially from those of a forward company.

The defences must be organized for fire in case the enemy captures the localities held by the forward companies ; the company must also be disposed, as far as possible, so that it can pass rapidly to the formation required for an immediate counter-attack should the opportunity be presented. The company commander must take the necessary steps to keep himself constantly informed by means of O.Ps., patrols, visual and other signals, &c., regarding the situation on the front of the forward companies so that he may be in a position to anticipate orders and be ready to intervene without delay at the opportune moment. He must also ensure that the platoon commanders are fully conversant with their respective tasks in the event of an immediate counter-attack being ordered, that the arrangements for the necessary fire support are worked out in detail and that the operation visualized is rehearsed where possible until every man knows exactly what is required of him.

8. Having organized his fire plan, allotted counter-attack roles to his reserve, and given instructions as to the priority in which the work of consolidation is to be carried out, the company commander will arrange for his active defence by means of *patrols* (see Sec. 150, Vol. I, 1926).

Patrols

9. Patrols may be either reconnoitring patrols or fighting patrols, but before deciding on his programme the company commander must first ascertain whether the battalion commander has any special orders to issue on the subject. He must also co-ordinate his arrangements with the companies on either flank.

Reconnoitring patrols will be sent out constantly by the forward companies during the hours of darkness and always just before dawn; also by day if the forces are not in too close contact.

Fighting patrols will generally be sent out by order of the battalion commander.

The strength of a patrol will depend on its task. If it is purely reconnaissance, the patrol will avoid contact with the enemy and will strive to gain the information it requires without fighting; by day it will be careful to avoid observation, and by night it will rely mainly on listening, advancing noiselessly and stopping frequently to check direction and to detect movement. The normal strength of a reconnoitring patrol will be a section, but it may be composed of a few selected men only.

On the other hand, a fighting patrol will be larger and may be sent out to accomplish some special task. It should usually be commanded by an officer. To achieve successful results it is necessary for the men to be fresh and to have had the opportunity of studying by daylight the ground over which they are to operate. For this reason fighting patrols will often be found from the companies in battalion reserve, but occasionally from the reserves of the forward companies. The patrol must be strong enough to dominate any patrols it encounters, to capture prisoners if possible, and to bring back the wounded. One or more Lewis-gun sections generally accompany a fighting patrol.

10. The success of a patrol depends principally on the leader and on the clearness of the orders he is given. He should be told:—

- i. What is known of the enemy's dispositions and the points on which he is required to bring back

information. Definite questions will produce definite answers.

- ii. The approximate route he is to follow, how far he is to go, and how long he is to be out.
- iii. The probable movements of other friendly troops in the neighbourhood.
- iv. The password, so that he can be recognized on returning to the lines in the dark. This password must be changed nightly or more frequently if it is thought that the enemy has discovered it.

The *formation* in which a patrol should move may be varied in accordance with the ideas of its leader, the darkness of the night, &c. By day it can move in an arrow-head or a diamond, but by night it should not be spread over so wide an area of ground that there is danger of touch being lost, or be kept so closed up that it can easily fall into an ambush; it should in any case be disposed in such a way that, in the event of the patrol falling into a trap, at least one man can escape to warn the defence. The Lewis-gun section or sections should be placed in position whence they can fire to the flank, and the whole patrol should be capable of putting up an all-round defence at night. The leader will move at the head of his patrol at night so that his decisions and orders can be acted upon promptly without any noise or confusion.

The time at which patrols are sent out and their routes must be constantly varied. Their activities will be increased before dawn or if there is reason to believe the enemy is massing for attack. ♣

Sentries must always be informed when patrols are being sent out or are returning, and in the latter case the approxi-

mate time when they are expected back and the password. If patrols fail to return at the proper pre-arranged time, light signals should be sent up to guide them in case they have lost their way.

11. The equipment to be carried by a patrol can be varied ; it should, in principle, be kept as light as possible so as to avoid noise and to enable the men to be active. Hand grenades should usually not be carried as they are as dangerous to the patrol as they are to the enemy ; furthermore, a nervous man may throw one prematurely and so give away the position unintentionally to the enemy.

12. All ranks of a patrol must be warned as in Sec. 2, 6, and no man will carry any official or private papers or distinctive badges which would give information to the enemy.

23. *The platoon in defence*

1. On receipt of orders from his company commander to defend a certain area the platoon commander will study the ground carefully, bearing in mind the positions of adjacent defended localities and the assistance he will receive from the artillery and machine guns.

He must give special consideration to the facilities afforded by the ground to the attack, and keep in mind the importance of concealment and the fact that the position should be defended by fire rather than by man-power.

In organizing the defence of his platoon locality he will :—

- i. Ensure that the section posts are mutually supporting and sufficiently close to each other to enable him to exercise control, but not so concentrated as to

constitute together a vulnerable target for the enemy's artillery.

- ii. In conjunction with the platoons on his right and left, make such arrangements as are possible to ensure mutual support by fire as between platoon localities : each, as far as possible, covering ground which is dead to the other.
- iii. So dispose his sections that, in the event of the platoon localities on his right or left being over-run by the enemy, his locality will be capable of all-round defence.
- iv. Make the best use of the natural cover available (walls, hedges, ditches, &c.), to obtain concealment and protection from fire.

In open country, however, it must be remembered that complete concealment will be impossible and to mislead the enemy as to the exact positions where posts are entrenched, it may be necessary to construct dummy trenches.

- v. Take care that there is no dead ground in his immediate front where the enemy can mass unseen. If this cannot be avoided, arrange to patrol such ground constantly.
- vi. Strengthen the defences as soon as possible by erecting a wire obstacle and by improving the natural cover. Defiles leading into his locality (roads, bridges, &c.) must be blocked at the first opportunity. Fence wire, trees, agricultural implements, &c., can often be called into service in mobile warfare ; even a single-trip wire concealed in grass is of value. Care must be taken

that any obstacles placed in position are under the fire of the defence and that they are not bullet proof.

vii. Ensure he has an adequate supply of ammunition.

2. The different methods in which a defended locality held by a platoon may be organized are similar to those given in Sec. 22. The extent of front allotted to a platoon, or the close nature of the country may, however, not always permit of a section being retained in reserve, though this should be done whenever possible (*see* Sec. 12, 1, iii).

3. Platoon commanders are responsible for organizing the duties and the work to be carried out by their sections, and a definite programme must be drawn up for each section post. When there is no danger of attracting the enemy's attention as much work as possible will be done in daylight. When in company reserve the programme will be so arranged that only two sections are on duty whilst the other two are resting. No shelters will be allowed in the front line posts held by the forward platoons. One man in each section post will be on duty by day, but at night, or in foggy weather, it may be advisable to post double sentries. In any case, patrolling is the best protection in darkness and in fog. Bayonets will always be fixed at night.

Equipment will always be worn in all the posts held by the forward companies, though special orders to remove it may be issued by the company commander in the case of a working party, when it must always be kept close at hand. Anti-gas respirators will be carried at all times. Movement in daylight in the open to and from the posts and the lighting of fires at all times will be forbidden in all forward defences which can be seen by the enemy's ground observation.

Rations and supplies will be brought up to the forward companies after dark by parties found by the companies in battalion reserve. The front line posts may, however, have to supply guides if there is any danger of the ration parties losing their way. All defences will be manned one hour before it begins to get light and for an hour after sunset until such time as the platoon commander is satisfied that there is no danger of a dawn or dusk attack.

The platoon commander will frequently visit his section posts to ensure that the men are alert: this may not, however, always be practicable or advisable by day unless the posts are connected up. He will always be accompanied by an orderly.

4. In the event of attack the platoon will defend the locality allotted to it to the last round and the last man, and will make a final effort with the bayonet sooner than surrender. Under no circumstances will it withdraw unless definite orders to do so are received from a superior officer.

24. The section in defence

1. The procedure to be adopted in the occupation of a post by a section is given in Section Leading.

The section commander will :—

- i.—(a) Explain to the men the general situation and the position of other sections and platoon H.Q.
- (b) Detail the men of his section to tasks, posting one as sentry.
- (c) Decide upon the ground which it is necessary to sweep by fire, and site his fire positions accordingly.

- (d) Decide how he will construct fire positions for each man, either by making use of existing accidents of the ground or, if such are unsuitable, digging slits or holes to afford cover, with the primary consideration that each man can use his weapon.
- (e) Select and indicate reference points and make a range card.
- (f) Give instructions as to the method to be employed for concealing excavated earth.
- (g) If a Lewis-gun section, have the magazines placed so as to be ready for the gun when wanted.
- (h) Ensure he has an adequate supply of ammunition.

ii. In addition make the following special arrangements for night :—

- (a) Work out the time-table of reliefs for his sentry post.
- (b) Make out a cut-and-dried-plan, so that every man knows exactly what to do in case of alarm. Rehearse this before dusk.
- (c) Look for and indicate to the men any means, such as objects which would be silhouetted against the sky, which could serve as a guide at night to neighbouring posts and platoon H.Q.
- (d) Fix bayonets.
- (e) Study the ground in front of the platoon locality and make a mental note of places to make for and aids to keeping direction if ordered to go out as a patrol during the night.
- (f) Make arrangements for night firing whereby he can ensure that his men will not fire into neighbouring section posts.

2. A section post should be constructed of such a length that a section can man it extended at intervals of at least five paces. If the whole section is bunched together there is a danger of the post being totally destroyed by one shell.

3. The security of a section post depends partly on the steps taken to conceal it and partly on the manner in which the sentry duties are performed. The posting of sentries must be done unostentatiously by day and noiselessly at night. During the hours of darkness sentries must rely more on their ears than their eyes and must be trained to discern the common sounds of movement. The position of the sentry post at night must be selected so that the whole section can be warned silently in case of need.

If anyone approaches, the sentry will immediately warn the post. As soon as the person or party is within hearing, the sentry will call out "*Halt*" and get ready to fire. If the order to halt is obeyed, the section commander will order the person or commander of the party to advance and give an account of himself. If the order to halt is disobeyed, fire will be opened without hesitation.

Sentries must always be posted and relieved by the section commander or the next senior.

4. All sentries must know :—

- i. The direction of the enemy.
- ii. The extent of ground they have to watch.
- iii. The position of the section posts on their right and left.
- iv. The names of any landmarks to their front.
- v. The procedure to be taken if they see anyone approaching the post.
- vi. Particulars of any friendly patrols due to return through their posts.
- vii. The password.

5. Section commanders will point out to the men the enemy's position, the probable lines of approach which the enemy may use, any areas which should be carefully watched and also the position of the posts on the flanks. They will frequently test their knowledge of these points by questions. Prominent landmarks should be given names.

6. No man may leave his post without the permission of his section commander.

7. In every post some form of alarm, other than whistles, must be arranged to give warning of gas.

8. Lewis guns will be in position loaded by night ; by day they may be concealed, provided they are ready for instant action.

9. Care will be taken never to light matches or to smoke at night in view of the enemy. Carelessness on this point may draw fire.

10. Rifles and oil bottles will be inspected morning and evening. Not more than one man in each section should be engaged in cleaning his rifle at the same time.

Strict discipline must be maintained ; the men must not be allowed to become lax in their appearance or in the care of their arms.

11. Sanitation must receive careful attention. Whenever possible, tins or buckets will be arranged for latrine purposes and their contents buried away from the post. The same procedure also applies to rubbish.

12. If occupying wet or marshy ground every possible care must be taken to keep the men's feet in good condition. When dry socks are not available the men should be ordered to take off their boots and socks periodically during the day, if everything is quiet, and massage their feet. At night the

men should be given some exercise if possible, such as digging or patrolling, to maintain the circulation.

13. In the event of *attack* the duties of the section commander are :—

- i. To control and direct the fire of his post.
- ii. To maintain fire discipline and so prevent a waste of ammunition.
- iii. To assist neighbouring posts with cross fire whenever he sees an opportunity to do so.
- iv. To maintain his position to the last.

If the enemy's shell fire is destroying the post, or, if during the attack, the enemy succeeds in manœuvring round the post to take it at a disadvantage, the section commander may be well advised to quit the actual post to take up a position on its flank. By this means he may avoid the total destruction of his section and may, in his turn, surprise the enemy.

25. *The construction of defences*

1. Infantry officers are responsible for siting, organizing and constructing their own field defences: they should, therefore, study the most suitable types of defences and the details of siting, in relation to armament, ground, concealment, &c.

2. The successful execution of works is entirely dependent upon efficient preparation and organization and upon the security of the working parties. The subject is treated in detail in the *Manual of Field Works (All Arms)*, 1925, while instructions as to the organization and security of working parties are contained in Secs. 9-15 of that manual.

26. *Reliefs.*

1. When ordered to relieve another unit, the battalion commander, accompanied by his company and platoon commanders or their representatives, will visit the position to be taken over in daylight and carry out a careful reconnaissance. In position warfare information will be obtained on the following points from the unit which is to be relieved :—

- i. Information as to the enemy, his habits, snipers, machine-gun and mortar positions and the work he is doing.
- ii. Number of men employed in holding the position and their distribution.
- iii. Normal distribution of Lewis and machine guns.
- iv. Artillery support and the position of battery observation posts.
- v. Position of listening posts.
- vi. Mining operations, if any.
- vii. Condition of wire and defences generally.
- viii. Work in hand and proposed.
- ix. Dug-out and shelter accommodation.
- x. Inter-communication.
- xi. Points specially liable to attack and likely points for carrying out raids in our own or the enemy's lines.
- xii. The position of trench and ammunition stores and the supply arrangements for water, rations and ammunition.
- xiii. Infantry observation posts.
- xiv. Sanitation.
- xv. Location of transport lines.

- xvi. Communications, whether concealed from view or not.
- xvii. Areas in the sector in direct observation of the enemy and danger points where fire is likely to cause casualties.
- xviii. Position of gas alarms and of anti-gas defence stores.
- xix. Nature of light signals for artillery support.
- xx. Position of the battalion aid post and of the advanced dressing station.
- xxi. Names of units on the flanks and the position of their respective headquarters.
- xxii. Defence scheme and a map of the defences.
- xxiii. Aeroplane photographs of the enemy's position if available.

2. Machine gunners, observers, and a proportion of signallers with officers and N.C.Os., should take over, whenever possible, twenty-four hours in advance of the battalion during daylight.

3. Reliefs will, as a rule, be made under cover of darkness. Guides must be provided, either by the battalion being relieved or else, on occasions, the relieving battalion can furnish them from the men who have been up in the position since the previous day. One guide will be required for each platoon, machine gun, battalion and company headquarters. Guides must know the exact spot at which they are to meet relieving troops and the best route to their destination.

4. Strict march discipline must be maintained by all parties moving to and from the position. No lights, smoking or conversation will be permitted in view or hearing of the enemy.

The pace in front must be very slow and the men must keep well closed up.

5. Before commencing a relief every party must receive orders as to what action it will take in the event of an attack while the relief is in progress. Relieving units will also receive orders as to the point at which they come under the command of the formation in the line.

6. Patrols will be sent out while a relief is taking place. They will be provided by the unit being relieved.

7. No post must be evacuated until the relieving troops have taken over. In a night relief the outgoing troops should get on the fire-steps, and the incoming troops form up behind them, changing places on the word "pass" from the section commander. If the trench is too narrow, the incoming troops should lie down on the parados, while the section commanders change the sentries. In a daylight relief any system may be used that best conceals the fact that a relief is taking place.

8. Officers handing over trenches, posts or defended localities are responsible for seeing that all available information is given to the relieving troops, and that all tools and trench stores are collected and handed over in the most convenient way and place. Receipts must be obtained for everything handed over. Care must be taken to ensure that all orders relative to the defence of the position, maps, air photographs, &c., are handed over to the relieving unit.

9. Immediately after the relief all men should be told off to their battle stations, and should occupy them until the company or platoon commander has been round and inspected the dispositions.

CHAPTER IV

PROTECTION

27. General considerations

1. A commander who succeeds in surprising his opponent gains a moral advantage which helps considerably to counterbalance any superior resources which the enemy may possess.

To guard against surprise, by taking proper measures for security on all occasions, is therefore the first responsibility of every leader in the field.

2. If the enemy is so closely watched that he can make no movement unknown to his opponent, surprise will be impossible. If, in addition, he is prevented from obtaining information regarding his opponent's dispositions, his chances of operating successfully, either in attack or defence, will be minimized.

3. A force can be regarded as secure from surprise only when protection is furnished in every direction from which attack is possible. A commander therefore interposes protective detachments between his main forces and the enemy, which are called advanced guards, flank guards, rear guards or outposts, according to the duties they are called upon to perform.

The strength, armament, composition, and dispositions of these detachments depend on the proximity, strength and characteristics of the enemy, the size of the force to be protected, the dispositions of neighbouring friendly troops, the nature of the country, and whether the duty is to be carried out in clear weather or in fog or darkness.

4. The duties of all protective detachments are :—

- i. To secure information at the earliest possible moment of any hostile movements.
- ii. To prevent the enemy's reconnoitring troops from obtaining information.
- iii. To gain time. In the event of the enemy being met they must at all costs, and regardless of any sacrifice, gain the necessary time to enable the commander of the force protected to put his plan into execution.

No larger force than is necessary for the attainment of these objects should be employed on protective duty.

5. In mobile warfare, where open flanks exist, the fact that a body of protective troops is in front must not be taken as affording complete security. Commanders of all troops, moving or halted in rear, must in all cases provide local protection for their commands which will vary in degree according to the risk of an attack.

6. At the end of a march the body of protective troops which has covered the movement remains responsible for the protection of the main body while halted, unless and until other arrangements are made by the commander of the force.

7. In the absence of special orders, protective troops are responsible for ensuring that connection with the force protected is maintained.

8. The action of infantry in all protective duties is governed by the principles laid down in the chapters dealing with attack and defence. Protective detachments are, however, weak in proportion to the frontages

on which they are required to operate, and consequently a certain amount of depth has, inevitably, to be sacrificed.

28. *Advanced guards*

1. Every body of troops advancing towards the enemy will be preceded by an advanced guard for its own local protection, irrespective of whether a protective screen (mobile troops and aircraft) is operating in front or not.

2. In order to carry out its tasks of securing information, preventing the enemy from obtaining information and gaining time (*see* Sec. 27, 4), an advanced guard has :—

- i. To reconnoitre. This generally entails offensive action to force the enemy to disclose the strength and position of his main body.
- ii. To brush aside the enemy's advanced detachments so as to prevent him from obtaining information and to prevent the march of the main body from being delayed.
- iii. Once opposition is encountered which it cannot overcome, to seize and hold the ground necessary to protect the deployment of the main body.
- iv. To pin the enemy to his ground and to prevent him from withdrawing. Contact with the enemy must always be maintained and the strength of his resistance tested constantly.

3. An advanced guard is usually a force of all arms, though tanks may not be available in sufficient numbers to admit of any being allotted to it. As a general guide its strength

may be taken as one-third to one-eighth of the force to be protected.

It will normally be divided into :—

- i. *Advanced guard mounted troops*.—Cavalry and armoured cars if available.
- ii. *Vanguard*.—Infantry, a small detachment of advanced guard mounted troops ; sometimes a proportion of light artillery and a party of engineers.
- iii. *Main guard*.—All troops allotted to the advanced guard which are not included in i and ii.

4. The advanced guard commander decides, in accordance with the instructions of the commander of the force he is covering, the hour at which the advanced guard will clear the starting point and the distance at which it will precede the main body. This distance will vary from time to time according to the nature of the country and the tactical situation. It should be sufficient to enable the main body to deploy if the enemy is met in force, and to admit of minor opposition being overcome without checking its march.

5. When the enemy is at a distance the necessary reconnaissance will be carried out by the R.A.F. and the mobile troops ; the advanced guard will move along the roads in the area allotted to the formation which it is protecting, taking such steps as are necessary for its own local protection. Plate VI shows the theoretical distribution of an advanced guard moving on one road. The distances shown are only approximate and are subject to considerable latitude according to the nature of the country.

6. The advanced guard mounted troops work in co-operation with those aeroplanes of the A.C. squadron, R.A.F., which are detailed for reconnaissance duties with the advanced guard. The mounted troops will act under the orders of the advanced guard commander. In open country the leading patrols should seldom be less than four to five miles in front of the head of the leading infantry of the vanguard.

In considering the tasks which can be allotted to them it must be remembered that their numbers are usually small and that reconnaissance entails dispersion : their power of taking strong offensive or defensive action is very limited, and early warning of impending danger is usually all that can be expected of them. In the issuing of orders to mounted troops it is important to give them definite questions to answer. They should be directed on to a series of tactical localities such as commanding ground, road junctions, river crossings, &c., and ordered to report at certain specified times whether the places selected are clear of the enemy or not. The method of carrying out the task will then rest with the cavalry officer concerned.

The advanced guard commander may sometimes require the whole, or a portion, of his mounted troops, to undertake some special reconnaissance or else to seize and hold a position pending the arrival of the infantry. The mounted troops thus employed must be relieved of all protective duties towards the advanced guard.

If armoured cars are working with the advanced guard mounted troops they can be used for independent reconnaissance, and may be able for a short time to prevent the enemy

from occupying important tactical localities pending the arrival of the slower moving troops.

7. The vanguard is generally composed of a small detachment of the advanced guard mounted troops, one-quarter to one-sixth of the infantry of the advanced guard, and, if the situation requires it, a proportion of light artillery and a party of engineers. The duty of the vanguard is to act as a protective detachment to the main guard, to supply it with information, and to overcome slight opposition which the advanced guard mounted troops are unable to brush aside. The vanguard commander must keep in touch with the advanced guard mounted troops so as to be in a position to act promptly when a situation demanding his intervention develops.

The mounted troops attached to the vanguard will be used to maintain touch between it and the advanced guard mounted troops and for close reconnaissance so as to save the infantry ; the latter will move along the road disposed in sufficient depth to ensure its own local protection.

Vanguard headquarters will normally move at the head of the main body of the vanguard. Only such transport as is required for fighting will accompany the vanguard ; the remainder of its first line transport will move in rear of the main guard under orders to be issued by the officer commanding the advanced guard. In attack the vanguard will act in accordance with the principles laid down in Chapter II, always remembering that a flank attack may be the quickest and most effective way of overcoming minor opposition.

8. The main guard comprises all the troops in the advanced guard other than the advanced guard mounted troops and

the vanguard. The advanced guard headquarters will usually move at the head of the main guard.

If tanks are allotted to an advanced guard they should march in the space between the advanced guard and the main body or, preferably, on a parallel road or track if one is available.

9. An advanced guard is given a series of objectives to be gained during the day's advance, and the advanced guard commander decides from the map certain important points of tactical importance which he should secure in order to carry out his task. These tactical points should be gained in a series of bounds and should, where possible, be included in the task allotted to the advanced guard mounted troops.

The times at which the advanced guard halts are regulated by the tactical features of the ground and do not necessarily synchronize with the hourly halts of the main body.

10. As the opposing forces approach each other the advanced guard will be compelled to deploy owing to the effect of the enemy's artillery fire or the attacks of his aircraft. The infantry will, therefore, already be deployed before it encounters the opposition of the enemy's protective troops, and will move in one of the formations given in Sec. 13, 11, each of the leading battalions being responsible for its own protection. The leading infantry must act with vigour so as to drive in the enemy's covering troops and gain contact with his main forces.

The artillery will move by bounds so that a portion of it is always in action to support the infantry; as it will generally be weak, it may be necessary to concentrate its fire in turn for the capture of the different objectives.

The objectives selected for attack must be those whose capture will best assist the subsequent action of the main body and will include important topographical features, favourable O.Ps. for artillery, villages which block the roads on the line of advance or woods which provide cover for the deployment of the main body.

As every minute brings the main body nearer, it is justifiable for the infantry to deploy on wider frontages than would be advisable in a more deliberate attack. If it appears likely that the enemy will gain the initiative it will often be advisable to deploy a portion of the artillery over a wide area to deceive him as to the strength of the forces opposed to him.

The essence of success lies in rapid and resolute action ; success at one point will usually prove sufficient and will force the enemy to act with caution.

11. *Advanced guard to a retreating force.*—It is usually advisable to have a small advanced guard to a retreating force. Its special duty is to clear away obstacles which would delay the march, but it should observe all precautions against surprise, and should invariably be accompanied by some mounted men for scouting purposes. A party of engineers should be attached for the removal of obstacles or the preparation of bridges, roads, &c., for demolition after the rear guard has passed (*see* Sec. 30, 3).

29. *Flank guards*

1. If there is any danger of a column on the march being attacked from the flank, a flank guard should be detailed prior to the commencement of the march.

2. In carrying out its protective duties a flank guard may have to fight for a considerable period unsupported until

such time as the whole of the force it is protecting is clear of the danger of attack. It is normally a force of all arms, though tanks may not always be available.

3. The task of a flank guard is difficult and much depends on gaining timely information about the enemy's movements. Close co-operation is necessary between any R.A.F. units working with the flank guard and the mobile troops (cavalry and armoured cars): the latter should be sent sufficiently far out to the flanks to give early warning of any threatened attack.

4. The mounted troops generally move by bounds, being directed on to a series of points of tactical importance on the flanks from which a good view over the surrounding country can be obtained. Special reconnaissances must also be sent to search large woods, &c., where the enemy might assemble for attack unseen from the air.

So long as there is no immediate danger of attack the remainder of the flank guard will move along the road allotted to it in column of route covered by its own advanced guard and, if necessary, by a rear guard. It is usually advisable for the flank guard commander to retain a portion of the mounted troops for close reconnaissance duties on the front and flank of his column and so spare the infantry: some mounted orderlies will also be required for inter-communication.

5. The limits of responsibility of the flank guard commander must be clearly defined by the commander of the force: the strength and composition of the flank guard will be governed by his decision on this point. In order to ensure that a flank guard of all arms can be in position on the threatened flank in good time it is necessary for its leading

infantry to precede or march level with the head of the main body, or even the advanced guard.

6. A flank guard must necessarily be weak in proportion to the length of column which it is required to protect. It cannot be strong everywhere.

If there is a probability of an attack it will have to occupy a covering position. The choice of the position demands an accurate appreciation of the probable line of the enemy's attack and a careful calculation of time and space, both in regard to the rate of the enemy's advance, and the hour at which the main body will be clear of danger. **When a flank guard is detailed to protect the movement of a large force it will generally occupy a suitable position on the flank until the movement has been completed.**

A flank guard commander must therefore study his map carefully and form an estimate in good time of any covering position, or positions, on the line of march to be followed by the flank guard which are sufficiently important tactically to be held in the event of attack. These positions must be reconnoitred by the unit commanders acting under his orders so that they can be occupied rapidly should the necessity arise. On occasions there may be some centrally placed commanding feature on the flank, the possession of which will afford the necessary protection to the main body during the day's march.

Unless the infantry is transported in lorries it cannot regain its position relative to the main body if it has to halt to take up a covering position. It will have to disengage from the enemy, fighting a rear guard action, and ultimately join the rear guard of the main body. Should there be a danger of an attack in flank further forward, another flank guard will

have to be detailed to secure the necessary covering positions.

Normally a flank guard will remain in position until such time as the outposts are posted.

30. *Rear guards*

1. When the strategical or tactical situation makes it necessary to withdraw in the face of the enemy, the first requirement is protection from the pursuing forces. This is effected by detaching a portion of the force to act as a rear guard.

2. The circumstances which compel a commander to withdraw are :—

- i. When he wishes to avoid or to postpone a decision by battle.
- ii. When it is necessary to break off an unsuccessful action.

In the first case, provided the withdrawal is begun before the opposing forces come into close contact, a serious collision will be unlikely: the principal duty of delaying the enemy will devolve upon the R.A.F., the mobile troops and the artillery. Should the withdrawal be delayed, however, for some unforeseen reason, it may then be necessary for the whole rear guard to occupy selected positions for a period sufficient to enable the march of the main body to be carried out unimpeded by the enemy. In the second case, no matter how serious the tactical situation may be, it will generally be advisable to postpone breaking off the battle until night-fall. It is necessary at all costs to gain sufficient time to enable the main forces to make good their withdrawal, other-

wise the losses in men and material will inevitably be heavy. To attempt a rapid retreat is to court disaster : the first stages of the withdrawal must be as short as possible or the whole force may become disorganized and its morale, already shaken by an unsuccessful battle, be finally broken.

It is essential to present a strong and intact front to the enemy, to thin the line gradually, to make full use of mechanical weapons and to counter-attack promptly to restore the situation should the enemy succeed in breaking through the rear guard at any point.

3. The strength and composition of a rear guard depends on such circumstances as the closeness of the pursuit, the length of time it is necessary to delay the enemy, whether the ground lends itself to delaying action, &c. In no circumstances should a greater force be employed than is absolutely necessary for the task in hand.

Should the tactical situation demand the occupation of a defensive position, it will be necessary, owing to its relative weakness, to deploy the greater portion of the rear guard at the outset. This will entail a certain sacrifice of depth, and it will only be possible to keep in reserve a force sufficient to meet an emergency or to deliver a counter-attack.

4. When deciding upon the composition of a rear guard due consideration must be given to the necessity of developing the greatest possible fire power with the minimum expenditure of personnel : mechanical weapons will play an important part and the aim of the defence should be to inflict serious losses upon the enemy should he attempt to attack without adequate reconnaissance and preparation.

These considerations demand an extensive use of machine guns, which can produce a great volume of fire relative to the number of men employed and so lend particular strength to a rear guard position. To attack it successfully, it will be necessary to locate the machine-gun positions accurately so that they can be dealt with by artillery and small-arm fire, or to organize some form of artillery barrage: either method takes *time*, and *time* is what the rear guard seeks to gain.

5. To command a rear guard is difficult: its commander has to make sure of delaying the enemy sufficiently long to enable the uninterrupted withdrawal of the main body and, if possible, to avoid the rear guard becoming seriously committed.

For these reasons the commander of the main body will periodically keep the commander of the rear guard informed of his progress, while the latter must send constant reports on the tactical situation to the commander of the main body.

6. A rear guard is divided into rear guard mounted troops, rear party and main guard.

When the pursuit is not close, its dispositions on the line of march resemble those of an advanced guard reversed. The chief responsibility for delaying the enemy under these conditions will devolve upon the R.A.F., the *rear guard mounted troops* and the artillery. Offensive action from the air, long range artillery fire and a carefully prepared scheme of demolitions all exercise a great delaying power on a pursuing force.

7. Should the enemy press the rear guard mounted troops, it will become necessary for the *rear party* to occupy suitable positions from which to delay the enemy and cover the withdrawal of the main guard. This possibility must be foreseen

in good time so that specially selected officers from the rear party may be sent back to reconnoitre such positions. In their selection concealment, a long field of fire and facilities for withdrawal, unobserved from the ground and air, will all play an important part.

Once the position is occupied by the rear party, the principal duty of the rear guard mounted troops will be to protect the flanks by wide and persistent reconnaissance but, if sufficient numbers are available, some of them may be used to cover the withdrawal of the rearmost infantry.

8. The *main guard* normally moves along the road in column of route, in the order of march which will enable it to come into action most readily.

Should the main body be delayed in its march, or should the enemy be pursuing vigorously, it may be necessary for the whole rear guard to occupy a defensive position.

9. In occupying rear guard positions it is important to hold strongly those localities which command the main lines of approach, and to ensure that the various localities held can mutually support each other by fire. The positions selected should be those which enable the dispositions of the troops and the strength of the garrison to be concealed, from which long range fire can be developed and from which it is easy to withdraw unobserved from the ground and air. Full advantage must be taken of existing natural anti-tank obstacles. Everything possible must be done to force the enemy to deploy early, to make his reconnaissance slow and difficult, and above all to confront him by fire from an unexpected direction should he attempt to attack without careful preparation.

10. To ensure that a continuous front is presented to the

enemy the commander of the main body normally lays down definite times up to which successive rear guard positions must be denied to him. These times are based on the anticipated speed at which the main column can withdraw and, on the nature of ground, as it is important that the enemy should not be permitted to occupy commanding positions from which he can effectively shell the main body in column of route. The commander of the rear guard, in his turn, will base the timing of the withdrawal of the different portions of his force in accordance with the orders he has received.

11. When the enemy begins to develop his attack the bulk of the infantry of the main guard will be withdrawn to the next position in rear covered by the rear party. To ensure control the frontage for which the rear guard is responsible should be divided into sectors; the commander of each sector will be responsible for providing his own rear party. The withdrawal of the rear parties along the whole front must be co-ordinated.

It is important that the enemy should remain in ignorance as long as possible of the commencement of the withdrawal or he may press home his attack relentlessly: hence the necessity in a rear guard position for lines of withdrawal which afford cover from ground and air observation.

Commanders must each send back an officer to reconnoitre the next position to be occupied. Company commanders must also bear in mind their responsibility as regards the reconnaissance of their lines of withdrawal.

It is an advantage if each successive position can be occupied by fresh units. This method enables the troops withdrawing to reform under cover of the new position, the defence can be more carefully prepared, and there is less danger of the rear guard becoming disorganized should the enemy press closely.

12. Rear guard positions should be sufficiently far apart to force the enemy, after deploying for attack, to reform column of route and to move his artillery before attacking the next.

13. Whenever possible a rear guard must avoid becoming closely engaged. If this cannot be avoided it will usually prove less costly to maintain the position until nightfall and to withdraw under cover of darkness.

14. A rear guard may be required to launch a counter-attack in order :—

- i. To disengage the whole or a portion of the force which has become seriously committed, should it be decided to extricate it in daylight.
- ii. To re-establish the situation at a place where the enemy has broken through.

The objective selected for the counter-attack must be strictly limited and the battalion, or battalions detailed to execute it must be supported by all the available artillery and tanks. The earlier the orders can be issued the better so that the unit, or units concerned can make their reconnaissances before the rear guard becomes too closely engaged.

If tanks are employed they should remain in action until the infantry has withdrawn, or is definitely established in the re-captured locality.

A counter-attack which is carefully planned and adequately supported by fire often achieves an easy success, as it usually finds the pursuing forces unprepared to meet it ; success must not, however, be exploited too far or the troops may be cut off. A

successful counter-attack usually imposes great caution on the enemy.

15. So far as *small units* are concerned, the principles governing the occupation of the localities allotted to them will conform generally to those laid down in Secs. 21-23 for defence in mobile warfare. Depth in the defence will, however, be very limited. The possibility of the enemy making a bold use of tanks must be borne in mind, and the defensive localities selected must be chosen as far as possible with a view to minimizing this danger.

Concealment and a long field of fire are both very important in rear guard action; success will depend largely on the care with which the unobserved withdrawal from the position has been prepared. It is to be anticipated that the enemy's aeroplanes will be active in their efforts to observe movements to the rear, and consideration must therefore be given as how best to avoid being seen by them.

Boldly handled and widely dispersed machine guns, sited by sections or sub-sections in well concealed positions from which they can command the main avenues of approach, will impose great caution on the enemy. The withdrawal must be carried out on a broad front and the various localities held by the rear guard must be thinned gradually. Careful arrangements must be made to prevent the enemy observing any diminution in the volume of fire: for this reason it is advisable to keep the machine guns and Lewis guns in action as long as possible and machine gun limbers must be kept close up. Riflemen must make full use of rapid fire.

It is inadvisable to use reserves to reinforce disorganized or exhausted troops who are retiring under pressure from the enemy. In these circumstances it is better to use the avail-

able reserves to stop the enemy by fire from a position in rear or to launch a counter-attack to re-establish the front where it has been broken.

Commanders must realize the importance of co-ordinating their withdrawals with the units on their flanks, otherwise gaps will develop in the defence through which the enemy may penetrate and so outflank and cut off portions of the rear guard. The troops, who have been disengaged, will go straight back to the next position in rear. **A running fight must be avoided at all costs as it only leads to loss of control.** Surprise, by withholding fire until a favourable target is presented, and ambushes, will often enable troops in immediate contact with the enemy to be disengaged without further interference.

16. The arrangements for the demolition of bridges, and other measures for delaying the advance of the enemy, require very careful co-ordination to ensure that all the plans are put into effect and that no bridge is destroyed or road blocked until it is no longer required. The rear guard commander may, in the case of very important bridges or roads, give the order himself for them to be destroyed or blocked: more frequently he will delegate the responsibility to some other officer who may be the commander of the rearmost unit expected over the bridge, the engineer officer in charge of the demolition, or another officer specially detailed for the purpose. In all cases the engineer officer, or N.C.O., will be told who is to give the actual order for the demolition; he will also be given written instructions in all cases as to whether, in the absence of further orders, he is to destroy the bridge should the enemy reach a certain position within effective rifle fire of it.

Engineers employed on demolitions will usually require an escort.

17. *Rear guard to a force advancing.*—If there is the possibility of the rear of an advancing column being exposed to attack, a rear guard of all arms, sufficiently strong to meet all emergencies, should be detailed.

If the main body and the transport march without any considerable distance between them one rear guard will suffice for the whole ; if, on the other hand, there is a large interval the rear guard will follow the main body and the transport will be allotted a special escort. Should the purpose of the rear guard only be to collect stragglers and keep off marauders, it is usually composed of infantry with a small detachment of cavalry to watch the flanks.

31. *Outposts. General considerations*

1. The troops to whom are assigned the duties of protection to a force, when halted, are called outposts.

The composition of outposts depends on the size and situation of the force to be protected, on the proximity, armament and characteristics of the enemy, and on the nature of the ground. Their strength should not as a general rule exceed one-quarter of the force protected. The methods adopted by troops marching in one or more columns and billeting for the night differ considerably from those used by a force which is deployed and in touch with the enemy and from those adopted by an independent column operating against a semi-civilized enemy. When a force is deployed the dispositions approximate to those employed in the organization of a defensive position as described in

Chapter III while, against a semi-civilized enemy, it may be necessary to arrange for all-round protection.

In the following paragraphs outposts will be considered from the point of view of a force halting for one night during mobile warfare against a civilized enemy. Under these conditions the enemy has little time for reconnaissance; a serious attack is unlikely, but, should it develop, it can be effectively held up, if not defeated, by the outposts provided the latter have a properly organized system of fire distributed in depth.

2. When a force is within striking distance of the enemy, the commander will decide first on his dispositions in the event of attack so as to include any ground essential to him for the purposes of observation. He will then fix the billeting or bivouac areas of the main body and the general line on which the outpost defensive position is to be established.

3. The duties of outposts are :—

- i. To ensure rest for the remainder of the force. To achieve this it is desirable that the outpost position should be sufficiently far in advance of the billets or bivouacs occupied by the main body to prevent the latter, if possible, from coming under the fire of the enemy's light artillery. In the case of small forces this will usually be impracticable as the outposts would either be too far out, and consequently in danger of being cut off, or else an undue proportion of men would have to be employed on outpost duty.
- ii. To prevent the enemy from obtaining information.

iii. In the event of an attack to give warning and to gain sufficient time, at any sacrifice, to enable the main body to take up the battle position in accordance with the plan prepared by the commander of the force.

4. To carry out their task outposts rely on two factors:—

- i. Information.
- ii. Resistance.

Information is supplied by the R.A.F., by the outpost mounted troops and armoured cars, by infantry patrols and by artillery and infantry observation posts.

The task of the mobile troops, when the opposing forces are not in close contact, is to carry out the duties of observation by day at a distance from the outpost position and so relieve the infantry to a large extent of this responsibility. They will supplement, or confirm, the information obtained by the R.A.F. units and will work in close contact with them. They will usually be withdrawn at night.

The artillery and infantry observation posts watch all the approaches which the enemy may use and also keep all bodies of the enemy within reach under observation.

By means of reconnoitring and, if necessary, fighting patrols (Sec. 22, 9), the infantry also examine all the localities where the enemy can conceal his patrols or mass for an attack.

Resistance is assured by the occupation of an outpost position distributed in such depth as the resources in troops and the nature of the ground will permit. The principles underlying the occupation of an outpost

position are the same as those laid down for the occupation of a normal defensive position. The difference between the two lies in the fact that there is seldom time for the detailed reconnaissances of an outpost position prior to its occupation and that the troops are numerically weak in proportion to the front to be held; the frontages allotted to units are, therefore, necessarily wider than would be the case in a normal defensive position with the result that a certain amount of depth has to be sacrificed.

5. To enable an outpost position to be occupied rapidly and methodically in depth a system of disposing outpost troops in piquets, supports and reserves has been evolved, the whole forming one system of defence.

A *piquet* is a detachment from which sentry groups and patrols are found. It will usually consist of one or more platoons and sometimes of a whole company. The piquets and supports correspond to the foremost defended posts and defended localities in a normal defensive position. It is an advantage if they are placed along a well-defined natural feature or in the vicinity of roads; this factor must not, however, be allowed to outweigh the necessity for making the best tactical dispositions the ground will permit in which concealment, mutual support, and facilities for observing all the approaches the enemy may use must receive the chief consideration.

Supports consist of one or more platoons, or of whole companies, and are used to give depth to the position held by the piquets. Their primary rôle is action by fire and their positions should be selected with this object in view.

Reserves should be so located as to give further depth to the system of fire of the defence and can be used for counter-

attack should the opportunity occur. The provision of a reserve, as in all other forms of defence, is essential.

The problem to be solved by the commander of a body of troops on outposts is to make the best defensive dispositions possible in the area of ground allotted to him. But this distribution into piquets, supports and reserves may not be necessary, and the actual method may be varied to meet any particular situation, so long as the principles that a force is protected against surprise, and given time to make its dispositions for defence, are fulfilled.

6. Outpost artillery is often required to support the infantry detailed for the defence of the outpost position. Its particular missions are to sweep the main approaches and likely assembly areas and to deal with the enemy's tanks.

7. The machine-gun defence will be organized primarily to assist in the defence of those localities to which the supports have been assigned and in covering the gaps between the piquets. Machine guns may also be usefully employed in sweeping the approaches to the outpost position.

8. At the end of a march, the advanced guard or rear guard remains responsible for the protection of the main body until the outposts are in position. Similarly, should a flank guard be out, it will remain in position until the outposts are posted.

Generally the advanced guard or rear guard, which has been responsible for the protection of the main body during the march, will be detailed to find the outposts when the force halts. When the march is resumed the outposts will not be withdrawn until the troops detailed for the protection of the march have passed through them.

9. Since the duty of outposts is to gain time to enable

the commander of the force to put his plan into execution it follows that, once the main body is ready for action, the outposts may cease to be necessary and their withdrawal may be desirable. It must, however, be clearly understood that only the commander of the outposts, acting under the instructions of his superior commander, can issue orders for their withdrawal.

32. *The battalion on outposts*

1. A battalion commander who has been allotted a sector of the outpost position, or who has been detailed to find the whole of the outposts to cover a force, will receive instructions on the following points :—

- i. Information about the enemy as far as is known, the line the mounted troops are holding in front and the hour at which they will withdraw, the battalions which will be on either flank and his points of junction with them.
- ii. The intentions of the commander of the force, the position the main body will occupy in the event of attack and the approximate length of time necessary for its occupation.
- iii. The general line of the outpost position, the sector allotted to his battalion, and the position of the reserve, if any, retained under the hand of the commander of the outposts together with any special counter-attack rôle allotted to it.
- iv. The tasks allotted to the outpost artillery, including anti-tank defence, and any special orders about machine guns.

- v. The hour at which night dispositions will be taken up and any special areas which are to be patrolled.
- vi. Orders about smoking, lighting fires and cooking.
- vii. Any special light signals and the system of signal communication.
- viii. The hour at which the outposts will be relieved.
- ix. Medical arrangements.
- x. The place to which reports are to be sent.

2. Having received his orders, the battalion commander will proceed to carry out his task in the following manner :—

- i. As a result of a study of the map, the frontage allotted to his battalion, the number of roads leading into his sector and the tactical importance of the ground, estimate how many outpost companies he will require.

(An outpost company should not, if possible, be allotted a greater frontage than 1,000 yards and this should be sensibly reduced if the ground is tactically important or if there is a danger of a serious attack.)

- ii. Having decided on the general frontages of the outpost companies, order them to proceed to positions, concealed if possible from ground and air observation, and approximately in rear of their respective fronts. Allot temporary positions to any companies he proposes to hold in reserve.
- iii. Carry out a personal reconnaissance. If time permits he will take with him his company commanders, machine-gun platoon commander and any artillery officer acting under his orders or supporting him.

- iv. As a result of his reconnaissance decide finally on the number of outpost companies he will require, allot localities to each of them to defend, select the position of his reserve and lay down the localities it may be required to recapture by counter-attack. Should there be any ground of particular tactical importance close in rear of the ground held by the outpost companies, it may be advisable to allot a special company to hold it. A company so detailed will not normally be given a counter-attack rôle.
- v. Decide on the dispositions of the machine guns. They should be distributed in depth and must not be used singly. Only under exceptional circumstances should they be placed in the foremost defences where they are liable to be rushed.
- vi. Consider the position of the anti-tank guns in relation to the localities occupied by the outpost companies.
- vii. Co-ordinate his dispositions with the battalions on either flank and notify them of any special patrols he intends to send out.
- viii. Issue orders about the hour when night dispositions are to be taken up.

The change from day to night dispositions should usually take place after dusk so as to escape air and ground observation. Day dispositions will be resumed next morning as soon as the patrols have reported there is no danger of attack or when the mounted troops have passed through the outposts. The outposts will not

close until the troops responsible for the protection of the march have passed through them.

- ix. Issue orders about light signals, inter-communication, anti-aircraft Lewis-gun fire, smoking, fires, cooking and whether the supports and reserves may take off their accoutrements.
- x. Notify the position of battalion headquarters and of the aid post.

3. By day, observation is the chief rôle of the outposts and this devolves principally on the outpost mounted troops. The remainder of the outpost troops will be given every opportunity to rest, but they must take such steps as are necessary for their own local protection. If an attack appears imminent the defences will be manned until such time as the danger of attack has passed.

4. When the troops have carried out a long march, and the outpost position is to be occupied for one night only, little consolidation is possible. Fire positions must in all cases be prepared and barricades should be placed on all roads or tracks leading into the position: the obstacles erected should be of a type which can be moved next morning before the march is resumed.

If, on the other hand, the force is to halt for more than one day, consolidation must be carried out on a definite plan as in any other defensive position.

Company commanders should be notified of the proportion of tools which will be available for them.

5. Detachments in close proximity to the enemy must avoid useless collisions. Attempts to carry off detached posts, sentries, &c., unless with some special object, are to be

avoided, as they serve no good end, give rise to reprisals and tend to disturb the main body.

6. Outposts stand to arms and send out patrols one hour before it begins to get light, and will remain under arms until the patrols report that there is no sign of an attack.

33. *The outpost company*

1. Having received the battalion orders, the company will be moved, taking the necessary precautions against surprise, to the area of ground allotted to it. The men will be halted under cover concealed from air and ground observation. Temporary alarm posts will be fixed and a covering party sent out for local protection until the position has been reconnoitred and occupied. The company commander will proceed to examine the ground, decide on the number, size and position of the piquets and, if necessary, of detached posts and on the position of the supports.

2. Plate VII gives two examples of the manner in which an outpost company may be distributed.

3. The number and strength of the piquets depend on the extent of front to be watched, the number of roads or tracks leading into the area of ground allotted to the company and on the tactical importance of the localities to be held.

Concealment plays an important rôle in the placing of the piquets as, owing to the weakness of the troops in relation to the extent of front to be held, it is necessary to keep the enemy in ignorance as to the exact positions which are occupied. The piquets should therefore be placed, as far as possible, in cover such as houses, copses, &c., and the intervening ground swept by cross fire or else covered from the

positions held by the supports. So long as they can afford each other mutual support by fire, the piquets need not necessarily all be placed on the same alignment, but it is an advantage if their general line runs along some well-defined natural feature or in the vicinity of a road.

The duty of observation will be carried out by the sentry groups posted from the piquets. The company commander will decide the general position on which the sentry groups will be established. It may be advisable to withdraw them into the piquets at night, in which case the task of obtaining information in advance of the piquet line will devolve on the patrols.

The supports are disposed to give depth to the positions held by the piquets and will consist of those platoons not required for the piquets, or for any detached post if one has to be found. The duty of the supports is first and foremost action by fire and their positions should be selected with this object in view. In the event of a minor enterprise against a piquet they may be required to counter-attack to eject the enemy : at night they should, however, maintain their positions until the extent of the enemy's penetration has been ascertained.

The localities held by the piquets and supports should, as far as possible, be organized to give each other mutual support by fire. Cases may occur where one locality is of sufficient size and tactical importance to require a whole company as its garrison.

4. As soon as the piquets are in position and their groups and sentries posted, the company commander will withdraw the covering troops. Such troops as are required for night dispositions only should not be posted until after dusk.

Piquets and supports must understand that it is their duty to hold their ground to the end and that there is only one degree of resistance, namely, to the last round and the last man.

5. The company commander will issue orders for patrols, the hours at which they are to go out and their tasks in accordance with the instructions received from the battalion commander. He will decide whether they are to be furnished by the piquets or the supports.

6. The dispositions of the companies on either flank will be ascertained so as to ensure that no ground is left unprotected. The battalion commander will be informed as soon as the outposts are in position and a rough sketch will be forwarded showing the dispositions.

34. Duties of the commander of a unit on piquet or in support

1. As soon as a commander has received his orders he will order his command to move, by a covered approach if possible, to a place in rear of that portion of the line for which he is responsible.

He will examine the ground and decide on the number of sentry groups he will require remembering that no more should be used than are absolutely necessary. If the ground is very open one sentry may be all that will be required by day whereas, if the country is close and good observation cannot be obtained from the position of the piquet, sentry groups will be necessary in order to obtain a view over the ground in front. Any sentry groups which are required for night dispositions only will not be posted till after dusk: it may often be advisable to withdraw the sentry groups

inside the piquet at night if there is a danger of them being cut off or of them masking the fire of the piquet.

2. He will then explain his orders to the men and will detail the various duties and their reliefs, including one or more sentries over the piquet or the support for the purpose of warning it in case of attack.

In order to prevent the men being unnecessarily disturbed at night, he will arrange that the N.C.Os. and men of each relief of the various duties bivouac together, and apart from the other reliefs. All reliefs should know exactly where to find the men of the next relief.

3. He will ensure that every man knows the direction of the enemy, the position of the various piquets and supports in his immediate vicinity, and what he is to do in case of attack by day or by night. He will then post his sentry groups and will satisfy himself that the sentry group commanders and the sentries know their duties.

He will impress on the men the importance, where possible, of getting a clear mental picture of their surroundings while daylight lasts.

He will see that each man understands that it is his duty to hold his ground to the end.

4. He will strengthen his post, providing fire positions and accommodation for the men, and will improve communications where necessary, without waiting for orders on these points. An obstacle, even if only a single trip wire, should be placed out in front and, if he is guarding a road, it should be barricaded. He will make the necessary sanitary arrangements.

5. He will maintain communication with the troops on either flank, arranging with them for mutual fire support and,

while limiting as much as possible any movement in the line of sentries which might be visible to the enemy, he will satisfy himself that the sentries are alert and know their duties.

6. Piquets and supports will invariably be ready for action. Not more than one or two men should be allowed to leave the unit for any purpose at one time. They should never be allowed to move about in, or in front of, the sentry line when seeking water, fuel, &c. By night all the men other than patrols must be with the piquet or the support.

35. *Sentries and sentry groups*

1. Sentries in front line are posted in groups and should consist by night of six men under a N.C.O. or the oldest soldier; by day a group of one N.C.O. and three men will generally suffice. On no account should sections be split up to obtain the necessary numbers. During the hours of daylight only one sentry is required and the remainder of the section lies down close at hand. If the men are very tired, or if special precautions are necessary, it may be advisable to post a double sentry. By night, or in fog, double sentries will always be posted.

2. The distance of a sentry post from the piquet depends entirely on the nature of the ground. Sentries should be placed so as to gain a clear view over the ground to their front, whilst concealed from the enemy's view. To avoid attracting attention they should not be permitted to move about and they should not be permitted to lie down except to fire. Except at night or in fog, or in positions where they may be suddenly rushed, the bayonets of sentries should not be fixed.

3. On the approach of any person or party, a sentry will immediately warn his group commander. When the nearest person is within speaking distance the sentry will call out "*Halt*" and get ready to fire. If the order to halt is obeyed, the group commander will order the person, or one of the party, to advance and give an account of himself. Any person not obeying the sentry, or attempting to make off after being ordered to halt, will be fired upon without hesitation.

4. A sentry must know :—

- i. The direction of the enemy.
- ii. The position of the sentries on his right and left.
- iii. The position of the piquet, of neighbouring piquets :
and of any detached post in the neighbourhood.
- iv. The extent of front and any special points he has to watch.
- v. How to deal with persons approaching his post.
- vi. Whether any friendly patrols or scouts may be expected to return through his portion of the line and the signal, or password, if any, by which they may be recognized.
- vii. The names of any prominent features, villages, woods, &c., in view and the places to which roads and railways lead.

5. Commanders of sentry groups must be given implicit instructions as to what to do in case the enemy attacks : whether they are to remain at their posts, in which case they must be protected from fire from behind as well as from the front, or whether they are to retire on the piquet. In the latter case they must be warned of the danger of arriving

headlong on the piquet only just ahead of the enemy: Commanders of sentry groups must also know what is to be done with persons found entering or leaving the outpost line (see Sec. 37).

36. *Detached posts*

1. Detached posts should only be employed in exceptional circumstances, owing to the danger of their being cut off. They may, however, have to be found occasionally in order to guard some spot where the enemy might collect preparatory to an attack or which he might occupy for purposes of observation. The strength of a detached post will depend on circumstances and, if only required at night, should not be posted until after dusk.

37. *Traffic through the outposts*

1. No one, other than troops on duty, prisoners, deserters from the enemy and flags of truce, will be allowed to pass through the outposts either from within or without, except with the authority of the commander who details the outposts. Inhabitants with information will be blindfolded and detained at the nearest piquet pending instructions; any information they bring will be sent as soon as possible to the outpost commander.

2. No one is allowed to enter into conversation with persons presenting themselves at the outposts except the commander of the nearest detached post, piquet or outpost company who will confine his conversation to what is essential.

Prisoners and deserters will be sent at once, under escort, to the authority appointed to interrogate them.

3. When there is a large number of refugees, it may be impossible to prevent them from passing the outposts and special arrangements will be necessary for their collection close behind it and their subsequent disposal.

38. *Outpost patrols*

1. The composition, duties, &c., of outpost patrols are the same as those laid down in Sec. 22, 9-12.

By day, when mobile troops are out in front, the main duty of reconnaissance devolves on them. But every commander is responsible for his own protection, and commanders of outpost companies, if the ground to the front interferes with the observation of the sentry groups, will have to send out patrols for their local protection and to examine woods, valleys, &c., in their immediate front where the enemy may collect. As movement through the outpost line may disclose its position, patrolling during daylight should be reduced as much as possible.

2. Patrols should be sent out in any case at dusk, at intervals during the night and one hour before it begins to get light in order to make sure that the enemy is not massing for an attack. When mounted troops are available they should move out before it begins to get light and, if possible, patrol all approaches to the position.

3. A *standing patrol* is a patrol sent out to remain at some definite spot to watch either the enemy, a road by which he might advance, or a locality where he could concentrate unseen. A standing patrol may be furnished by mounted troops or by infantry and it must be prepared to remain out for several hours. The patrol commander must arrange to send back an immediate report of any hostile movement

observed and, if the enemy advances in strength, must, in default of other orders, withdraw his patrol before becoming seriously engaged.

39. *Battle outposts*

1. The system of outposts described in the preceding sections is intended for the protection of a force not in close contact with the enemy, and, therefore, still able to manœuvre. It has been pointed out that the number of outpost troops required, and the depth in which the outpost position should be organized, will depend upon the nearness of the enemy, his strength and the possibility of attack, &c.

2. As the opposing forces approach each other and finally come into close contact the whole or greater part of the troops must gradually assume a state of complete readiness for action, each forward company protecting itself by sentries and patrols. The forward companies then take the place of piquets and supports, the outpost having gradually merged into a system of defence in depth as described in Secs. 21-23.

It will often occur in these circumstances that no orders can be issued by superior authority as to measures of protection. In any case nothing can relieve the commanders of advanced troops of the responsibility of securing themselves from surprise and, unless circumstances forbid, of keeping touch with the enemy.

40. *Protection from aircraft*

1. Concentrated rifle fire or Lewis-gun fire from the ground is effective against low-flying aircraft up to about 3,000 feet, but neither is of any value unless it is controlled.

2. Although only 5 per cent. of the surface of an aeroplane

is vital to small-arm fire, yet hits on a larger proportion will necessitate repairs at the aerodrome and keep the aeroplane out of action for varying periods. Consequently the moral and material effect of controlled small-arm fire against aircraft flying at altitude not exceeding 3,000 feet is much greater than is apparent from the ground and limits the information which an observer can obtain.

3. It is the duty of every commander to make the necessary arrangements for the protection of his command and normally controlled fire should always be opened against low-flying aircraft.

Frequently, however, the only means an air observer will have of ascertaining whether an area is occupied or not will be by deliberately drawing fire. When it is essential to conceal from the enemy that a locality is occupied, definite orders must be given prohibiting the opening of small-arm fire against aircraft by the units occupying such locality or area. Conversely, when a commander desires an air observer to know that certain areas are occupied, or wishes to make him believe that they are more strongly held than they in fact are, special instructions as to the opening of small-arm fire with this end in view should be given.

In any case spasmodic, indiscriminate rifle fire against aircraft is useless and is forbidden.

41. Visibility from the air

1. To hide troops from the air requires both time and a knowledge of the extent to which objects on the ground can be distinguished from the air.

2. When no cover is available it is important that all regular formations should be avoided for the reason that straight

lines and right angles are unnatural and therefore attract attention. By dispersion in the open a considerable degree of concealment from the air can be obtained. Movement is easily distinguishable, but if troops lay face downwards and not in regular lines, they are difficult to observe even from aeroplanes as low as 1,500 feet. If limbered wagons cannot be hidden, they may be left scattered about fields and may thus be mistaken from the air for farm carts and implements.

3. *Woods* provide the most obvious cover from view. Their value for this purpose depends upon the nature of the trees, their spacing, and the time of year. An air observer vertically above a wood can see more than would be anticipated, looking at it horizontally. If the undergrowth has been cut within five or six years it gives practically no cover.

Fires in a wood are always visible from the air.

When concealed in woods, *strict* discipline is essential. If men wander outside the wood, or even on the paths within it, they can be easily seen from the air.

It must, however, be remembered that woods within the reach of the enemy's artillery become obvious targets and may lead to heavy casualties to reserves concealed in them. If beyond the range of artillery, woods are liable to bombardment from the air and gas bombs have a more lasting effect if dropped in woods than elsewhere. Under suitable weather conditions, a wood that has been bombarded with gas may remain a danger to troops for at least a fortnight.

4. *Shadows* are nearly as valuable for concealment as direct cover so that, when possible, troops should remain in the shade whilst aircraft are overhead.

5. *Roads*.—Men and vehicles show up more clearly on an untarred by-road than on a tarred main road.

Movement on roads requires careful arrangement for dispersion and to prevent the closing up of columns during halts. Transport should never move in convoy and at the most ten vehicles should move together.

6. *Atmospheric conditions* affect visibility from the air, and the following table may be taken as a rough guide to the detail which can be seen from various heights in fair weather:—

500 feet.	Troops can be recognized as enemy or friendly.
1,000 feet.	Concentration in trenches can be seen.
1,500 feet.	Movements in the open can be observed.
5,000 feet.	Movements of formed bodies on a road are visible.

CHAPTER V

FIGHTING IN CLOSE COUNTRY, WOODS AND VILLAGES

CLOSE COUNTRY FIGHTING

42. Influence of close country on tactics

1. Any tract of country in which view and movements are seriously restricted by woods, fences or high crops is "close country." Its influence upon tactical methods depends therefore upon the season of the year, the general effect being to restrict visibility and to hamper movement, thereby rendering control and co-operation extremely difficult. The collection of information, the exercise of command, and the co-ordination of the resources available, become increasingly difficult the more enclosed the country. In close country, both in attack and defence, the tactical importance of roads, tracks and railways, is relatively greater than in open country owing to the difficulty and delay in deploying from them.

2. Measures which aim at overcoming the natural difficulties of the ground, by ensuring constant control by commanders and the closest touch between the smallest units are most certain of success. Infantry reconnaissance must be thorough, but must not be pushed too far ahead, as little or no detailed information of the enemy can be expected from air reconnaissance. Objectives must be close and the progress of troops operating on neighbouring routes must be co-ordinated step by step; frontages must be relatively small and reserves kept closer to hand than in open country. Carefully organized means of inter-communication, especially by orderlies, and

frequent exchange of information between units are of particular importance in close country.

3. Close country makes deployment slow and direction difficult to maintain both in attack and counter-attack. Objectives are often difficult to select and describe, and the support of an attack by fire is always hard to arrange.

4. Close country favours delaying action. It is, however, difficult to find a position in close country which is suitable for protracted defence, where full use can be made of fire power, and the enemy deprived of covered lines of approach.

5. Surprise in close country is comparatively easy to obtain, adequate measures for protection are therefore all the more important. Troops fighting in close country are generally very sensitive about their flanks. This fact affects the defence more than the attack as there is a danger that a defensive position, penetrated at one point, may give way everywhere.

6. An important characteristic of fighting in close country is the inevitable loss of higher control; much therefore depends on clear initial orders and instructions and on the initiative displayed by subordinates.

43. The attack in close country

1. The attack in close country is based on the same principles and tactical considerations as any other attack. The following characteristics are, however, peculiar to such an attack :—

- i. More cover can be obtained, and it is therefore possible to suffer fewer casualties than in crossing open ground.

- ii. Greater opportunities for manœuvre by small bodies of troops are offered and it is possible, on occasions, for them to surprise the defence as to the direction and the weight of the impending blow.
- iii. It is difficult to maintain control and direction.
- iv. The power of the other arms, in support of the infantry advance, can rarely be fully developed.
- v. The movement of wheeled vehicles is often impossible except along roads, and consequently many opportunities are offered to the guns and aircraft of the defence to delay the advance.

2. In recognition of these characteristics, reconnaissance must be detailed both as regards the enemy's dispositions and the ground, careful preparations have to be made to ensure control and co-operation between the different parts of the attack, means have to be provided to facilitate the movement of vehicles (gaps cut in hedges, ditches, bridges, &c.), and the troops must be highly trained and resolutely led.

3. When selecting objectives in close country it is important to choose lines (roads, tracks, streams, clearings, &c.) which can be easily recognized on the ground, and along which touch can, as necessary, be re-established. Since it is rarely possible to keep the objective in view throughout the attack, the use of the compass is imperative. The danger of losing direction is greatest when making use of covered approaches, crossing obstacles oblique to the line of advance, seeking gaps in an obstacle and when fired upon from an oblique direction. Every opportunity must, therefore, be taken to reorganize,

both for the purposes of regaining control, and for checking the direction of the advance.

In certain circumstances artillery may be able to assist infantry in maintaining direction by the employment of a few smoke shell in marking objectives, boundaries between units, new front on change of direction, and in timing and co-ordinating the resumption of the advance from one objective to another. But it must be remembered that the amount of smoke shell available in the field is limited.

When moving in file along covered approaches, such as hedges or ditches, infantry must take steps to avoid being caught unawares by enfilade fire at short ranges. Much depends on the way in which the scouts carry out their task. Even despite careful scouting infantry may suddenly come under a heavy surprise fire at any moment, and they must be prepared for this eventuality.

4. When the nature of the country is such that different attacking units cannot keep in view of each other, commanders must make adequate arrangements to ensure touch being maintained with units on their flanks. This may be done by observers or patrols meeting at previously selected places and halting and gaining touch on roads which run perpendicular to the line of advance. Special light signals may also be arranged, on occasions, to signal to the rear when certain important localities have been occupied.

44. The defence in close country

1. The defence in close country is based on the principles laid down in Chapter III.

2. By employing troops in covering positions, the defence is often able to force the attackers to deploy prematurely; such deployment is necessarily hampered by the conditions of the ground whilst the withdrawal of the covering troops can often be carried out unobserved.

3. As has been pointed out already, it is on fire that the defence relies principally to stop the attack (Sec. 19, 2, ii). In the defence in close country, however, good fire positions are usually difficult to find; the infantry must consequently do all it can to clear the foreground. Where the cover is thick and the time for preparation short, it may only be possible to clear lanes to be swept by the fire of machine guns and Lewis guns.

In order to facilitate the movement of reserves, the avenues of communication must also be improved.

4. The immediate counter-attack is a vital factor in the defence in close country. The enemy often succeeds in effecting a local penetration. As it is usually only made in weak numbers in the first instance, it is important to eject him by counter-attack before he brings up troops to exploit it. Once a local penetration is successful it may soon become dangerous to the defence owing to the difficulty of locating the limits of the hostile gains and of checking the movement of reinforcements.

5. Commanding positions in close country provide an easy objective for the enemy's artillery and infantry and so tend to assist the attack. On the other hand, they may offer such advantages, in the form of an increased field of fire and observation, as to make their occupation advisable.

WOOD AND VILLAGE FIGHTING

45. *General considerations*

1. Woods and villages form extreme types of close country. Both have considerable tactical value in war and consequently form natural magnets for troops operating in their neighbourhood. It must always be borne in mind that woods afford particularly suitable targets for bombardment by gas shell. Woods that have been bombarded with persistent gas may remain dangerous to troops for periods up to fourteen days.

2. When fighting takes place inside a large wood or village in mobile warfare the infantry of both sides generally escape from the full effects of artillery fire owing to the difficulty of communicating to the guns the exact positions of the combatants. If of sufficient size they form excellent positions for the defence as movement inside them, and the exact positions of the defensive works, are difficult to see from the air or to detect on aeroplane photographs. It is also easy for the defender to organize his defences so as to force the enemy into the arcs of fire of his prepared machine-gun positions.

Small woods and villages offer favourable targets for concentrated artillery bombardments. In the early stages of the defence in mobile warfare, when the enemy's artillery fire is slight and concealment plays an important part, it may be an advantage to hold them; but if it appears likely that they will be heavily shelled or gassed, the casualties incurred will probably be disproportionate to their tactical value.

3. To attack woods and villages is difficult as it is hard to find out the exact positions which are being held; good co-operation between the artillery and infantry is therefore

not easy to achieve. Whenever possible it is best to attempt to outflank and surround them and then to proceed to clear them of the enemy. If they are too big to enable this to be done, successive objectives should be fixed and the attack carried out methodically on each objective in turn.

46. *The attack in woods*

1. In the attack the first objective is the edge of the wood and the operation differs in no way from the attack on any other position. It must be remembered, however, that salients which exist are useful to the defence for flanking fire and are consequently often strongly held and protected by obstacles; it is therefore generally advisable to subject them to heavy bombardment and to attack the intermediate portions which are usually less strongly garrisoned.

Once the outskirts are reached, immediate steps must be taken to get the troops in hand and to guard against a possible counter-attack. Small parties must be sent forward at the same time to reconnoitre the wood and to maintain touch with the retreating enemy.

2. Once inside the wood a commander can make his preparations for attack under cover and consequently unobserved by the enemy. In cases where the defenders are not holding a continuous line the narrow field of view and fire gives the attacker good opportunities to manœuvre and the fact that the reserves can move under cover quite close up to the forward units often enables the enemy's defences to be surprised in flank and destroyed before the enemy realizes what has happened.

3. When an advance is being made through a wood it is necessary to proceed methodically. Direction is always difficult to maintain during the advance and compass bearings

must be taken frequently. Extensions, intervals and distances will depend on visibility, which will in turn depend upon the density of the wood. The leading companies should protect their fronts by means of an extended line followed by section or platoon columns. In very thick woods it may be necessary to have connecting files to keep touch between this extended line and the heads of the columns in rear, as well as laterally between columns. The battalion reserve should normally move in platoon columns.

To provide for control and the maintenance of direction it will be necessary to make frequent halts on the near side of all rides and clearings which run parallel to the front of attack. These halts are necessary for the purpose of re-organization and to re-establish touch, and should, when possible, be pre-arranged.

4. Detachments of engineers should, when possible, accompany infantry in order to assist in the clearing and the repair of roads and tracks.

5. All rides and clearings must be very carefully examined. Movement along rides running parallel to the line of advance should be avoided by forward units, who should move through the wood just clear of them. If there is any probability that the enemy can command transverse and diagonal rides with enfilade fire, the infantry should line up on the near edge under cover and cross at a single rush.

6. Artillery support usually takes the form of a concentrated bombardment, prior to the infantry assault, to assist the infantry to capture the edge of the wood. When fighting is in progress inside a wood the artillery support is necessarily very slight owing to the danger of the shells bursting prematurely among the branches and the difficulty of com-

municating to the guns exactly where the fighting is taking place.

Machine guns may however be used with advantage with the forward units to replace the artillery support, but care must be taken not to allot tasks to these machine guns which would be better performed by Lewis guns. **Troops must therefore not halt to open fire unless absolutely forced to do so, but must rely chiefly on the bayonet.**

The fighting is nearly always at close quarters, and the main object of the attacking troops is rapidly to outflank any parties of the enemy as soon as they are discovered.

7. Owing to the difficulty of maintaining direction it is not usually possible for infantry advancing through a wood to keep touch with the troops advancing outside it. The latter should therefore be made responsible for the protection of their own flanks and must establish posts on the edges of the wood as the advance proceeds. In the case of small woods, units which have advanced on each side of it may gain touch on the far side by extending inwards and bringing up reserves to fill the gap. The capture and clearing of the wood should be the task of a complete unit and will usually form a separate operation.

8. It must be remembered that the enemy will probably open a heavy artillery bombardment on the edge of the wood as soon as he knows that his own troops have been driven out of it. Before the extreme edge of the wood is cleared it is therefore advisable to reorganize the forward companies so that they may debouch into the open on the heels of the retreating enemy and get well clear of it before the bom-

bardment opens. Isolated detachments which advance into the open prematurely run the risk of being destroyed in detail.

9. The attack upon a small wood should be made from a flank if possible. The wood should be subjected to heavy covering fire whilst the infantry move round one or both flanks, and, turning inwards, deliver an enveloping attack. Machine guns and Lewis guns should be pushed forward to positions on the flanks from which they can command the exits. They will then be in a position to stop the arrival of reinforcements and to cut off the retreat of the defenders.

10. Smoke may often be used with advantage to blind small copses and thickets and, in the case of large woods, to blind machine-gun positions and defended posts.

11. Tanks co-operating with infantry in the attack on the edge of a wood can best assist by destroying the enemy's machine-gun positions, by attacking the defenders simultaneously from several directions, by enfilading the defences, and by covering the flanks of the attacking infantry. They must maintain close touch with the infantry throughout the operation and no tanks should advance into the wood until the infantry is firmly established on the outskirts. If tanks are employed to assist the infantry in attacking through a wood they must necessarily be confined to rides and they consequently run considerable risk from anti-tank weapons. The more usual practice will be for the tanks to work round the wood and deal with any machine-gun positions or other defences they may meet on the way; they should then be rallied undercover and held in readiness to attack the enemy's infantry if it retires from the wood in disorder or else to

assist our own infantry to debouch on the heels of the retreating enemy.

12. When an advanced guard has moved through a large wood unopposed, a halt should be made before quitting the far edge. Advantage should be taken of this halt to reorganize the infantry, to reconnoitre and to take bearings of the ground ahead.

13. When marching through extensive belts of wooded country both land and air reconnaissance are difficult, and there may be the possibility of a surprise attack in flank delivered by mobile troops, including armoured cars or tanks. If such a danger is anticipated it is advisable to put small flank guard detachments, which should include some guns, to protect the various possible avenues of approach for such an attack. These different detachments should remain in position during the passage of the column and its transport, withdrawing to join the rear guard as soon as their respective missions are completed.

47. The defence in woods

1. When woods fit into the general scheme of defence they should be held, as they afford valuable obstacles to break up the enemy's attack, provide natural cover for the defence and also give protection against tanks. On the other hand, if the enemy is likely to employ heavy concentrations of persistent gas, they may be rendered untenable by either side for days (*see* Sec. 45, 1).

2. A wood which is too far in front of the position to be a serious threat to the defence should not be held, but steps must be taken to site the forward defences in such a way that, in conjunction with artillery and machine-gun fire, the

defenders can bring an effective fire to bear on the exits. It may often be advisable to send fighting patrols into the wood when an attack is imminent in order to harass the enemy's advance. These patrols may be furnished, if necessary, from the reserves so that the troops holding the forward defences need not be weakened. If time permits, entanglements and obstacles should be prepared both inside the wood and on its near edge, to hinder and disorganize the enemy's advance.

3. The defence of small copses in close country can often be effected by entangling them and commanding them from positions in rear. By this means the enclosures can be used to break up the enemy's attack and to force him to advance between them where he can be engaged by fire under favourable conditions.

4. The general system of the organization of a wood for defence normally includes the holding of positions either in advance of the forward edge or just inside, of further positions in the interior of the wood, and of defences in its rear to guard the exits.

5. When considering the question of holding the front edge of a wood it must be remembered that it will probably be subjected to a heavy and accurate artillery bombardment. It is therefore usually advisable to hold the front edge of a wood lightly with Lewis guns or machine guns, retaining the bulk of the infantry sufficiently far within the wood to avoid the weight of the artillery fire which may be directed on the outskirts.

In siting defences in front of a wood the effect of the height of the trees on the trajectory of the shells of the supporting artillery must be considered; it is therefore always advisable to obtain advice from the artillery commander concerned

so that the defences may be placed in positions where full advantage of the available artillery support may be obtained.

The outskirts should be entangled whenever time permits, and the obstacles should be covered by the flanking fire of machine guns.

6. The defences inside the wood will consist in commanding, by fire, all the principal rides and clearings which the enemy will have to cross in his advance. Machine guns and defended posts will be sited with this object in view and obstacles should be arranged to force the enemy into the arcs of fire of the machine guns; as the rides and clearings usually run at right angles to each other a comparatively small number of machine guns will be required.

Buildings inside a wood, which cannot be dealt with by artillery fire, often form valuable keeps from which to command rides and clearings; on the other hand, if they are situated in wide clearings where they may be subjected to concentrated artillery fire, they will usually become shell traps, and it will therefore be inadvisable to hold them.

7. Anti-tank weapons must also be sited to command the principal rides and clearings which run parallel to the line of the enemy's advance.

8. The first essential in organizing a position in a wood is to provide an effective field of fire by clearing the foreground. It is usually best to thin the trees and undergrowth judiciously rather than to attempt to clear it completely. The advantage of the former method is that, by its means, the possibility of effecting surprise is retained and the trees and undergrowth left in position serve, in some degree, to break up the attack.

9. Breastworks with a *parados* are normally more suitable than trenches in a wood. In any case the space between the parapet and the *parados* must be very narrow to save casualties from overhead splinters of shells bursting against the branches of trees. In front of those portions of the position where the defence is intended to be merely passive, *abatis* should be constructed when time is available.

10. If, despite the efforts of the defence, the enemy succeeds in capturing the wood, every effort must be made to prevent him exploiting his success. With this object in view defences must be organized in rear with a good field of fire to prevent him debouching, and the artillery positions should be sited so as to engage the enemy and his tanks under favourable conditions.

48. *The attack on villages*

1. Before a village is attacked it should be subjected to the heaviest possible artillery bombardment and machine-gun fire. The attack should, whenever possible, be delivered from the flank, and only as few troops as possible employed frontally where it is to be anticipated that the strongest resistance is to be expected.

2. A town or a village should form a distinct objective, for the capture of which a definite formation or unit should be allotted. This course is advisable on account of the inevitable slowness and exhausting character of fighting amongst houses and clearing cellars. If, however, the resistance is of short duration the commander of the formation or unit detailed to capture a town or village must at once follow up the retreating enemy.

3. The delay entailed in capturing the village must not be allowed to retard the progress of the attack of the troops on either flank. If these troops succeed in advancing, a gap will be caused in the frontage of the attack beyond the village. If such a gap is of considerable extent it will be necessary to fill it by a fresh body of troops from the reserves. These troops will pass by one or both flanks of the village to take over the frontage beyond the village and continue the advance.

4. A town or village should be divided into areas for the capture of which separate formations or units should be detailed. Each area in turn should be subjected to an intense bombardment before the infantry assault and must be consolidated as soon as it has been captured; barricades being erected on cross roads and all commanding buildings put in a state of defence.

5. When tanks are employed in the attack the closest co-operation is necessary between them and the infantry owing to the ease with which the defenders can hide from the tanks. In towns and villages some tanks must remain in a street until the cellars and upper storeys of the houses have been cleared.

In some cases large areas may be enveloped by infantry who, protected by tanks on their inner flanks, and, if necessary, by smoke, advance on both sides of the defended locality to objectives beyond. The enveloped area may then be cleared by parties of infantry and tanks specially detailed for the purpose. In such cases adequate arrangements must be made to prevent bodies of infantry, attacking from different directions, firing into each other.

6. In the case of a long straggling village which lies at right angles to the line of advance, it is sometimes advisable for the tanks and infantry to attack it from the flanks. The village is subjected to an intense bombardment which gradually moves inwards from the flanks towards the centre.

7. The Lewis-gun sections of each platoon should occupy positions from which they can fire on the houses to be captured. Under the cover of the Lewis-gun sections, the rifle sections of the same platoon will then secure the surrounding houses and cellars. This accomplished, the platoon will establish itself in the buildings which command the roads and open spaces ready to meet a counter-attack, its place, in the advance, being taken by the next platoon which should pass beyond it and take up the fight in a similar manner. In this way the momentum of the attack will be maintained and the enemy allowed no time to rally.

When clearing a village it will often be less costly to advance through the backyards of the houses than down the street.

When moving down a street infantry should be preceded by an advanced party and should move in single file on both sides close up to the houses, watching the windows and doors on the opposite side, and covered, if possible, by a Lewis gun in position in a window at the end of the street. If a cross roads has to be passed, the advanced party must look up each road before crossing, and must then get across at top speed. If the crossing is swept by fire, its passage may only be possible under cover of smoke. A small rear party should also be detailed to watch windows and doors after the others have passed.

In this type of fighting smoke and H.E. grenades can be used most effectively.

8. It may be necessary to use pack or field artillery in close support of the infantry when the fire of the defenders is preventing access to a street. Such resistance is to be expected at street junctions, sharp bends or from large isolated buildings.

To be effective the guns will usually have to be employed at very short ranges.

9. When organizing the defence of a village which has been captured it is to be anticipated that it will be subjected to heavy shelling. The defences therefore should be sited in advance of the village and the reserves should occupy a line in rear of it from which the exits can be commanded.

In the case of a large village with good cellar accommodation, it may be advisable to establish a keep on the outskirts and towards the rear flanks with good all-round defence.

49. The defence of villages

1. A town or a village should be allotted a separate formation or unit as its garrison.

2. Villages, even after they have been destroyed by shell fire, give a great deal of cover and shelter to the defence and are difficult to attack.

3. On the other hand, small and badly built villages without cellar accommodation may become shell traps. In such cases, where the ground in front of the village can be covered by fire from the flanks, it is advisable to site the forward defences to sweep the approaches with enfilade and oblique fire. By this means the village itself is used as an obstacle to break up the attack. The defence would then be

arranged to induce the enemy to make a frontal attack so that he may be caught in enfilade by the machine guns and dealt with by artillery fire should he succeed in penetrating into the village. Fire positions should also be held in rear of the village to catch the enemy should he attempt to debouch from it. At the opportune moment a counter-attack can then be launched to eject him.

4. In the case of a large village the forward defences should usually be sited in front of it so as to escape the effects of a bombardment directed at its outskirts.

5. The defence of the interior of the village may largely be entrusted to machine guns and Lewis guns; generally speaking, however, the field of fire inside a village is so restricted that it may be a waste of fire power to site machine guns inside it.

The defences should be sited in buildings which command roads and open spaces. Such buildings should be loopholed, windows sandbagged, cellar accommodation strengthened, and communication opened from room to room and house to house (*see* Sec. 64, *Manual of Field Works (All Arms)*, 1925). Engineers should be detailed, when possible, to assist the infantry in this work.

Cross roads, village greens and market squares should be specially strengthened by barricades or trenches on the rear side to take advantage of the field of fire afforded. Localities, or keeps, must also be organized for protracted defence and allotted a definite garrison. They will often prove of great value in breaking up an attack, and will also facilitate the re-capture of the village by counter-attack.

6. Anti-tank guns must also be sited in positions which will give a good field of fire. They will then be available to engage

the enemy's infantry at short range as they advance up the streets.

7. The danger of disorganization in street fighting is so great that all subordinate leaders must use every effort to retain control and keep their men in hand.

8. Garrisons must be placed on both sides of a street, as it is not always certain from which end of it the attack will be delivered.

9. Special report centres should be established at central points known to all the defenders.

10. Churches, town halls, market places, or other prominent buildings, should be avoided as billets for large bodies of troops.

CHAPTER VI

NIGHT OPERATIONS

50. *General considerations*

1. The main objects in undertaking night operations are to effect surprise and to avoid observation and fire. Night marches and night advances have consequently increased in importance owing to the range and offensive capabilities of modern aircraft, which make it difficult to conceal the movement of troops and transport by day. They are, however, subject to certain limitations owing to the difficulty of maintaining direction and inter-communication, both of which increase in proportion to the number of troops employed and the darkness of the night. Furthermore, movement across country at night is slow, difficult and fatiguing, and if troops are constantly called upon to undertake night marches, they will inevitably suffer in fighting efficiency.

2. Night attacks may be undertaken to confirm or to exploit a tactical success gained during the day and so take advantage of the enemy's temporary disorganization, to drive in the enemy's advanced troops, to capture some important commanding ground as a preliminary to an attack at dawn, or to surprise a demoralized, ill-trained, ill-disciplined or semi-civilized enemy. The objectives must, however, be strictly limited and, when two forces are in close contact, it will rarely be possible to surprise a civilized and disciplined enemy completely. It must also be recognized that if the troops are

suddenly subjected to fire from an unexpected direction, or if they encounter unforeseen obstacles, they are more liable to be thrown into confusion than would be the case in a day-light attack.

3. Success in all night operations, therefore, depends on a thorough reconnaissance by day and, when possible, by night ; on simplicity of plan, on secrecy so as to effect surprise, and on minute preliminary preparation. Previous training in night work by the troops employed is also essential.

4. Night operations may take two forms :—

- i. Night movements carried out behind covering troops, *i.e.*, night marches, the assembly of troops for attack at dawn, reliefs, and similar movements.
- ii. Night movements unprotected by other troops. These movements include night marches, other than in (i) above, advances, attacks and withdrawals.

Attacks at dawn are not included in the term night operations.

5. All night operations, other than marches carried out to avoid the heat of the day, or routine night movements, are tactical operations. In such operations all ranks must be informed what they are to do in case of alarm or attack. Rifles should not be loaded, but magazines should be charged. No firing is to take place without orders. Absolute silence must be maintained, and no smoking or lights are to be allowed, except with the permission of the commander of the force.

51. *Night marches*

1. The object with which night marches are undertaken is to effect, unseen by the enemy :—

- i. A concentration of superior strength at a decisive point.
- ii. A transference of troops from one part of the battle-field to another.
- iii. A withdrawal of troops not in contact with the enemy in order to avoid a decisive engagement.

2. In the reconnaissance for a night march under cover of other troops the route should be examined both by day and night.

If the march be by road, it may be necessary to post men at branch roads where the column might go astray, or it may be sufficient to mark such places.

If the march is to be made across country, the route should be fixed by compass bearings. All landmarks which are visible by night should be noted and the distance between those that lie on the line of advance should be measured in order that the progress made at night may be checked. Where the country is featureless, it may be necessary to post men at certain points along the route, particularly at places where a change in the compass bearing has to be made. Men so posted should be given the compass bearing and the distance to the next post.

The general direction may be effectively kept by means of stars. It is therefore important that an officer should acquire sufficient knowledge of the stars to enable him to ascertain his bearings by them (*see* Manual of Map Reading and Field Sketching).

If it is necessary to check distances, an officer should be specially detailed for the purpose.

3. When a night march is a prelude to an attack (Sec. 53), a position of assembly must be selected at which march formation will be abandoned and deployment take place. This assembly position must be adequately protected and should be such that the troops can deploy easily in it at right angles to the subsequent line of advance. It is an advantage if guides can be sent forward in daylight so that companies can be led to their correct positions in the assembly position silently and without confusion. The position of assembly must be carefully reconnoitred and its appearance by night noted. It may be difficult to recognize it in the dark, and it should, therefore, where possible, include some well-defined landmark. It is also an advantage if reliable local guides can be procured.

4. In a night march unprotected by other troops there must be no risk of the column meeting the enemy in its march formation. The march must therefore be protected by small infantry advanced and rear guards. In close country the flanks are best protected by piquets posted by the advanced guard and withdrawn by the rear guard. In open country either piquets or flanking patrols can be used, but the latter, unless accustomed to night work, are liable to lose direction.

The distance of the advanced, flank and rear guards from the column will vary according to the darkness of the night and an indication of the distance to be maintained should, therefore, be given in orders.

To prevent troops going astray the advanced guard, under instructions from the commander of the column, will block all roads which are not to be used by posting men at them or

by placing branches of trees or lines of stones across them. Men so posted will be withdrawn by the rear guard.

5. If obstacles are likely to be encountered, a party of engineers with the necessary tools and materials for clearing the obstacles should accompany the advanced guard. After crossing an obstacle where opening out is likely to occur the column will advance about its own length and will then halt until the rear is reported to be closed up.

6. In night marches the regulation distances between units may, on very dark nights, be reduced or omitted, but normally it is best to retain them in order to prevent constant checks throughout the column.

An officer will invariably march in rear of each unit.

The hours and periods of halts will be arranged before starting, and no unit will halt until it has regained any distance it may have lost.

During halts the men may lie down, but they must not leave the ranks ; mounted men will retain hold of their horses.

7. Every commander must have a fixed place in the column, where he should remain. An orderly officer will be detailed from each battalion to convey instructions to battalion commanders from brigade headquarters.

52. *Night advances*

1. A night advance is a forward movement by a force which is already deployed with a view to a surprise night attack on a portion of the enemy's position or to occupy ground from which an attack may be launched at dawn or in daylight ; a night advance unprotected by covering troops is a dangerous operation and should only be undertaken in special circumstances and for a short distance.

2. When a night advance is a sequel to a night march the distance between the position of assembly and the objective will depend on the nature of the country, the enemy's vigilance, the possibility of discovery, and the composition of the force.

3. The formation to be adopted at the assembly position will be that in which the remainder of the advance is to be made, but may be subject to slight modifications at the forming-up place (Sec. 53, 2) if the advance is to culminate in a night attack. It will vary with the ground and with the special circumstances of each case, such as the type of the objective, the probable strength of the enemy's defences, &c.

4. Both in the case of a night advance and of a night attack (Sec. 50, 3) as thorough a reconnaissance as circumstances will permit must be made of the ground over which the advance is to be made. Air photographs will be of great value for this purpose.

5. The rate of advance will depend upon the darkness of the night. It is, however, unsafe to count on troops moving deployed in the dark faster than one mile an hour.

6. If obstacles are encountered which cannot be readily traversed or removed, the troops will lie down until a passage has been cleared.

Small parties of engineers will accompany battalions to assist in clearing away obstacles. They will also be available, on arrival at the objective, to give such technical assistance as may be required in the consolidation of the position.

The advancing troops must be preceded by covering detachments for local protection and ground reconnaissance.

7. The instructions laid down in Sec. 50, 5, regarding rifles, firing, smoking, lights and silence apply equally to night advances. If patrols, scouts, or advanced parties are en-

countered they must be rushed in silence with the bayonet without hesitation before they have had an opportunity to give the alarm. If the enemy opens fire after the assembly position has been left all ranks must understand that it is their duty to press forward and close with the enemy at once, cost what it may. No movement to the rear must be permitted, even to correct mistakes which have been made, so long as it is intended to continue the advance.

8. In the case of a force already deployed artillery support can be afforded by the guns already in action. When the night advance is a sequel to a night march it will seldom be possible to arrange artillery support unless the conditions are very favourable and time can be allowed for the accompanying artillery to come into action before the advance commences.

53. *Night attacks*

1. Night attacks have the following characteristics:—

- i. Surprise can be effected more easily than by day and may have greater results, especially against troops who are not highly trained. Undertaken as a counter-attack against a locality captured by the enemy just before dark, a night attack has good prospects of success.
- ii. The fire of the defence is unaimed and it is almost impossible for the enemy to exercise fire direction or fire control.
- iii. Observation from the air is difficult.
- iv. It is almost impossible to manœuvre at night. It is therefore unnecessary to dispose the attacking troops in much depth, as it is very difficult to direct reserves against those points where they will be needed during the action.

- v. They should rarely be attempted by a force larger than one infantry brigade against one objective; the objective selected should be limited, well defined and easy to recognize in the dark.

In the case of a large force deployed on a wide front, several distinct objectives may be attacked simultaneously with advantage. The attacks of neighbouring units and formations are difficult to co-ordinate, however, and once launched, they must be prepared to carry out their respective tasks practically independently.

- vi. Exploitation of success by night is very difficult and, as the attempt to carry it out may lead to disorganization, it should be deferred until daylight. Where conditions appear likely to be favourable for exploitation, the attack should be timed to reach the objective just before daylight. Under other circumstances the attackers should be given two or three hours of darkness after the capture of the objective in which to prepare and organize the defence to meet counter-attacks.

- vii. Owing to the objective being limited and the difficulty of getting accurate information in the dark on which to base decisions, the influence of the commander is almost wholly exerted in the care bestowed on the preparation of the attack.

- viii The artillery has to fire according to a pre-arranged programme. The main weight of the responsibility for success in a night attack devolves on the infantry.

ix. In a night attack against semi-civilized or ill-armed troops, some of the advantages given by modern weapons are forfeited.

2. A night attack is usually undertaken from a position in close contact with the enemy.

The actual ground on which the infantry form up for the attack, known as the "forming-up place," should be as near the position to be assaulted as is consistent with the provision of reasonable immunity from detection by the enemy.

3. Before the troops move off from their assembly positions to the forming-up places it is essential that the orders should be clearly explained to all ranks, so that everyone may know :—

- i. The object in view, the direction of the objective and its distance from the forming-up place.
- ii. The formation to be adopted at the forming-up place.
- iii. The part he has to play.
- iv. His action in case the enemy is not surprised.

4. Platoon commanders must also satisfy themselves that the men fully understand the following instructions :—

- i. Rifles will not be loaded, but magazines will be charged. No man is to fire without a distinct order.
- ii. Until daylight, bayonets only will be used in the attack.
- iii. Absolute silence must be preserved, and no smoking, talking, striking of lights or flashing of electric torches will be permitted. The troops must

break step when moving. The men must be warned that, if they cannot refrain from coughing or sneezing, they must press a handkerchief or some similar article against the mouth or nose.

- iv. If obstacles are encountered which cannot be readily traversed or removed, the troops will lie down until a passage has been cleared.

5. The forming-up of the troops for the attack requires very careful organization to ensure that it is conducted noiselessly and without confusion. The success of the operation will largely depend on the way in which it is carried out. The forming-up place must be easily recognizable, and if no natural landmarks are available it will have to be marked by tapes or wire. If tapes are used they must not be placed in position in daylight as they can be seen by aircraft.

6. In framing battalion orders for a night attack special attention should be paid to the following points :—

- i. Assembly position. The time of arrival at and departure from. Order of march, formation, distances and intervals on leaving the assembly position. Special protective arrangements for the advance from the assembly position to the forming-up place.

Maintenance of communication.

The compass bearing and distance of the advance.

Time and duration of halts.

- ii. Forming-up place. To be described if possible. Its distance from the position of assembly should be given.

Formation to be adopted at the forming-up place.

- iii. Description of the objective. Special instructions for the attack, including halts to correct alignment, and the arrangements for artillery support. Signal for the assault to be launched, whether light signal, opening of artillery fire, time, &c.

Compass bearing of, and distance to, the objective from the forming-up place.

- iv. Action in case the attack is disclosed by flares dropped from aircraft, if patrols or scouts are met, if obstacles are encountered which cannot be readily crossed, and if the enemy opens fire.

- v. Method of consolidation and the arrangements to meet counter-attacks.

- vi. Rôle of the reserve held in hand by the battalion commander and the employment of the machine guns. How ground likely to enfilade the captured position is to be dealt with.

- vii. Instructions regarding Cl. R. aeroplanes after day-break.

- viii. Distinctive marks and password.

- ix. Wounded, prisoners, ammunition, rations.

- x. Inter-communication. Place of battalion headquarters at the assembly position, during the march thence, and at the forming-up place.

The importance of secrecy must always be borne in mind in night operations, and orders should only be communicated beforehand to those officers from whom action is required. Until the troops reach their assembly positions no more

should be made known to them than is absolutely necessary.

7. When considering the formations to be used in night attacks it must be remembered that to manœuvre, to pass fresh troops through on the objective, or to carry out out-flanking movements, are very difficult operations to execute in the dark. Further, the attacking troops moving over unknown ground are liable to come suddenly and unexpectedly under artillery, machine-gun and rifle fire or possibly to meet uncut wire obstacles; the formations adopted must, therefore, be sufficiently flexible to minimize these risks. A formation in small columns distributed in depth is more flexible than line, ensures better control, is better for crossing rough ground and obstacles, is less vulnerable to unaimed fire, and is easy to deploy from. In the move forward from the assembly position to the forming-up place the leading companies should be preceded by officers' patrols for local protection; these patrols will also be responsible for selecting the best line of advance for their respective companies and for driving in or capturing silently any scouts, advanced parties or patrols who may be encountered. These officers' patrols will subsequently cover the deployment of the battalion on the forming-up place and will rejoin their respective companies before they move forward to the assault.

The troops should be allowed to rest a short time at the forming-up place before the hour of attack.

Normally the forward platoons should deploy into section columns at the forming-up place and company commanders should retain small company reserves under their own hands. The distances and intervals between neighbouring platoons and sections will be considerably smaller than in a

daylight attack. The closer the touch between units the less likelihood will there be of confusion, but the intervals will vary according to the darkness of the night and whether the country is open or close, &c.

The task of the battalion reserve is to hold a line behind which the assaulting columns can reorganize should they be driven back in confusion. Later they will be available to exploit success at dawn or to relieve any unit which has suffered severe casualties. The machine guns will be sent forward after the attack to assist in the consolidation of the captured position.

54. *Night withdrawals*

1. When in close contact with the enemy a withdrawal can most easily be effected at night.

If the enemy does not discover the intention to withdraw until it is dark he will :—

- i. Have great difficulty in organizing and setting in motion a pursuit.
- ii. Be uncertain as to the extent of the withdrawal and will have to proceed with caution.

2. Secrecy is of supreme importance, and the following principles should be observed :—

- i. Normal activity must be maintained as long as possible, and care must be taken to avoid any marked increase in firing which might tend to make the enemy suspicious.
- ii. The troops in position must be withdrawn on a definite time programme beginning with those in reserve and the transport.

iii. Fighting patrols should be sent out at frequent intervals in order to drive in or to keep the enemy's patrols at a distance.

iv. The front line troops should be thinned out gradually and withdrawn in small bodies to the rear by the most direct routes. No attempt to concentrate them should be made until they are well clear of contact with the enemy.

3. A carefully worked out time-table is the basis of a well-organized withdrawal. The hours laid down for the different phases must be scrupulously observed. The fact that a neighbouring unit has withdrawn must not make a unit hasten its own departure unless it receives a written or verbal order to do so from an officer with authority to give it.

CHAPTER VII

AMMUNITION SUPPLY

55. *General consideration*

1. The fundamental principle of ammunition supply is that ammunition must be passed systematically from rear to front to replace that expended in battle.

Troops in action should never have to turn their backs on the enemy in order to fetch further supplies.

2. Each echelon must be constantly aware of the position of, and be in communication with, the echelon next in front of it, so that the nature and the quantity of the ammunition wanted can be sent forward promptly to the points required.

3. All expenditure from the various ammunition echelons must be replaced immediately.

56. *System of distribution in front of railhead**

1. The reserves of ammunition for infantry units held in advance of ammunition railhead are distributed in the following echelons :—

- i. The S.A.A. Section of the Maintenance Company R.A.S.C. which carries ammunition from railhead to the divisional ammunition refilling points.
- ii. The S.A.A. Section of the Ammunition Company R.A.S.C. which replenishes from the S.A.A. section of the maintenance company at the divisional ammunition refilling points and delivers to

* The organization referred to in Secs. 55-58 will be adopted so soon as the necessary amendments have been made to War Establishments.

the first line transport of battalions, either at the brigade ammunition reserve, if one is formed, or at the battalion ammunition reserve.

iii. Brigade ammunition reserve, if formed.

iv. Battalion ammunition reserve in first line transport vehicles and pack animals.

v. Company pack animals forming the company ammunition reserve.

2. The amount of ammunition carried in the various echelons is subject to amendment from time to time, but may be found in the latest edition of War Establishments.

3. The ammunition refilling points are situated within easy reach of the S.A.A. section of the maintenance company.

57. The S.A.A. section of the ammunition company

1. The S.A.A. section of the ammunition company carries the S.A.A. and grenades for the whole of the division.

It consists of 21 light lorries, of which 15 are for S.A.A. and 6 are for grenades.

2. On the march the position of the S.A.A. section is usually in rear of the fighting troops of the division, though special circumstances may render this undesirable.

When an action is imminent the S.A.A. section moves forward to establish connection with the infantry brigades of the division and during the battle occupies positions favourable for communication and supply.

3. Normally the S.A.A. section will only supply the infantry brigades and divisional troops of the division to which it belongs.

On an emergency in battle, however, it will supply ammunition to any troops on demand.

4. Should it be necessary, a proportion of the S.A.A. and the grenade lorries may be formed into an independent sub-section under an officer for the supply of any troops temporarily detached from the division.

5. As soon as it moves forward, prior to an action, the commander of the S.A.A. section, or a sub-section of it, will :—

- i. Send forward an officer or N.C.O. to ascertain the position of the troops he has to supply.
- ii. Send a motor cyclist to remain with the commander of each of the brigade ammunition reserves until there is no longer any probability of ammunition being required.
- iii. Send forward ammunition during the action as demanded by the commanders of the brigade ammunition reserves.

The lorries conveying this ammunition will normally unload and return to the S.A.A. section as soon as possible.

58. *The direct issue from and replenishment of the battalion S.A.A. wagons and pack animals*

1. The ammunition available in an infantry battalion is distributed between the man, pack animals and the first line transport.

2. A brigade reserve, under a selected officer, will normally be formed by detaching from each battalion as many of the S.A.A. limbered wagons as the brigade commander may think

fit. The brigade reserve so constituted then forms a link between the battalions and the S.A.A. section of the ammunition company. It should be regarded as available for the brigade generally, but in the case of necessity it will supply ammunition to any troops engaged. This reserve marches in rear of the brigade. When action is imminent and during the action itself, it moves as the brigade commander may direct.

If battalions are detached to any distance they will usually take the whole of their S.A.A. limbered wagons with them. The brigade reserve will be reformed on their return.

3. The commander of the brigade ammunition reserve will :—

- i. Notify the S.A.A. section of the ammunition company directly a brigade reserve has been formed in order that the commander of the S.A.A. section may send forward an officer or N.C.O. to ascertain the position of this brigade reserve, and detail a motor cyclist to remain with it.
- ii. When necessary send back this motor cyclist to the S.A.A. section in order to bring forward ammunition to the empty vehicles of the brigade reserve. The request for the amount of ammunition required will be sent, in writing, to the officer in charge of the S.A.A. section of the ammunition company by the motor cyclist orderly furnished for that purpose who will also act as a guide to the officer bringing the ammunition forward. This

orderly will be used for no other purpose. Demands for ammunition will be made out for the number of boxes required.

- iii. Not send men and transport animals belonging to the brigade reserve to the S.A.A. section of the ammunition company, nor men and transport animals belonging to the latter further to the front than the brigade reserve, except in case of emergency.
- iv. Retain empty transport in the brigade reserve until reloaded or replaced.
- v. After an action, or during a pause in the engagement, make good from the S.A.A. section of the ammunition company all deficiencies of ammunition.
- vi. When required, replenish battalion ammunition reserve by sending forward vehicles belonging to the brigade ammunition reserve. Animals taking forward these vehicles will be hooked into the empty battalion vehicles which they will bring back to the brigade reserve.

4. The S.A.A. limbered wagons remaining with each battalion, after the brigade reserve has been formed, march in rear of the battalion, or as the brigade commander may direct.

5. Whenever a collision with the enemy is probable, battalion commanders will increase the number of rounds carried by each man of rifle sections from the battalion S.A.A. limbered wagons, taking steps to replace these issues from the brigade reserve.

The amount of extra ammunition issued will be governed

by the importance of maintaining the mobility and fighting efficiency of the men. In normal circumstances no man should be called upon to carry more than 100 rounds, though exceptionally this number may be increased to 170.

The extra rounds will usually be issued from that portion of the battalion S.A.A. reserve not allotted to companies.

6. The ammunition pack animal allotted to each company is placed under the charge of a selected N.C.O. During an action this N.C.O. will direct the movement of the pack animal in accordance with the orders of the company commander, and he will keep as close to the company as possible. He will also superintend the issue of this ammunition and, as soon as the supply is exhausted, he will obtain a further supply from the battalion reserve.

7. On deployment the transport carrying the machine-gun ammunition will move as directed by the commander of the machine-gun platoon.

8. The portion of the battalion S.A.A. reserve not allotted to companies will be under the regimental serjeant-major; at the outset it will be retained in the hands of the battalion commander and will move as directed by him. The exact distribution in action of the battalion S.A.A. reserve will depend principally on the nature of the ground. The object is to maintain the power of replenishing the supply from the brigade reserve, whilst getting the battalion reserve as far forward as possible so as to facilitate the supply of ammunition to the forward units.

The regimental serjeant-major should be provided with signallers and orderlies, when necessary, for the purpose of maintaining communication with the N.C.O. in charge of the company pack animal.

The responsibility for communication being from rear to front in ammunition supply, it is the duty of the officer in charge of the brigade S.A.A. reserve to send orderlies forward to stay with the battalion S.A.A. reserves.

As the battalion transport becomes empty it will be refilled or exchanged, under the direction of the regimental serjeant-major, from the brigade reserve. During the final stages of the attack every opportunity of gaining ground must be seized, so that the battalion S.A.A. reserves may be at hand as soon as the position is carried.

CHAPTER VIII

ORDERS, REPORTS AND MESSAGES

59. *Orders and instructions*1. *Orders*.—Orders in the field are classified as :—

- i. *Standing orders*, which are issued to save frequent repetitions in routine and operation orders.
- ii. *Routine orders*, which deal with matters not concerned with operations, such as discipline, interior economy, &c. They are usually issued daily.
- iii. *Operation orders*, which deal with strategical and tactical operations such as marches, protection, attack and defence and occupation of quarters.

When detailed operation orders cannot be issued in sufficient time to enable the troops to make the necessary preparations, a “warning order” should be issued as soon as the general outline has been decided upon. This order will state when and where the complete orders will be issued.

- iv. In addition to the above, special orders such as “*Orders of the day*” will be issued occasionally. These are orders of a special nature which cannot be conveniently classified as either standing, routine or operation orders.

2. *Instructions.*

- i. These may be issued in place of, as a preliminary to, or in amplification of operation orders, or they may deal purely with administrative matters.
- ii. *Operation instructions* may be used to indicate the general idea in the mind of a commander when the situation is not sufficiently clear for him to give definite orders. They may also be used to give detailed instructions as to the action of the various arms (artillery, engineers, &c.) in order that the operation orders may be carried out effectively, especially when the inclusion of these details in the orders themselves would make them too lengthy and so detract from their clarity.
- iii. *Administrative instructions* deal with such matters as supply, transport, ammunition and other administrative matters. The general outline of these instructions may, if it is considered advisable, be included in the paragraph in operation orders dealing with administrative arrangements, but this paragraph should be kept as short as possible.

60. *Issue of orders*

1. In a battalion, orders are issued by the commanding officer or by the adjutant acting under his instructions.

In large formations they are issued by the staff acting under the orders of the commander.

2. Normally, orders will be issued through the usual official channel. In cases of exceptional urgency an order may be given by a superior to a subordinate commander without passing through any of the intermediate authorities.

In such cases the officer issuing the order will inform any neighbouring formations likely to be affected and will confirm it through the usual official channel. The recipient in turn will inform his immediate superior of the receipt of the order and of the action he is taking on it.

3. For example, a divisional commander giving a battalion commander an order direct will let the brigade commander know the purport of the order: the battalion commander will also notify the brigade commander of the action he is taking in accordance with the divisional commander's order.

4. If lengthy orders are to be issued, a staff officer should invariably be sent in advance to subordinate units to give them the lines on which they will have to work when the complete orders are received.

61. *Operation orders*

1. An operation order must contain just what the recipient requires to know and nothing more.

2. In framing an operation order the general principle is that the object to be attained, with such information as affects its attainment, will be briefly but clearly stated; the method of attaining the object will be left to the recipient to the utmost extent possible.

3. To facilitate the quick reading of orders it is important that the same logical sequence and form should always be used:—

SECRET.

(..... Unit) Operation Order No.

Copy No.

Date

Ref. Map No.

i. Information.—

- (a) Regarding the enemy.
- (b) Regarding our own forces.

The general situation should be given under headings (a) and (b) and should contain only such information as is necessary to assist the recipients in carrying out their allotted tasks. Effective co-operation between units and neighbouring formations will depend largely on the amount of information as to our own forces given under (b). In this respect the question of secrecy must always be considered.

ii. Intention.—A brief summary of the intention of the officer issuing the order. It is seldom necessary or advisable to look far ahead in stating intentions. Alternative plans and conditional statements, depending on developments, are apt to cause doubt and uncertainty and should be avoided.

iii. Method of putting the plan into effect.—The detailed orders for the operation will be given under this heading, including the part to be played by the other arms. The various arms will be dealt with in the order of importance.

iv. Administrative arrangements.—Under this heading will come only such general instructions as regards arrangements for supply, transport, ammunition and medical services, &c., as it is necessary for all recipients of the order to know.

v. **Inter-communication.**—

- (a) Where reports are to be sent.
- (b) Routes to be followed.
- (c) Liaison with neighbouring units or formations.
- (d) Communication to and from the air.

vi. **Acknowledge.***Signature.**Rank.**Appointment.**Unit.*

Method of issue and time
(when actually issued)

Distribution and Copy No.

62. Orders in mobile warfare

1. Orders will be issued in writing whenever possible as a verbal order or message is more likely to cause misunderstanding than a written one. A verbal order should be confirmed in writing at the earliest opportunity, but in mobile warfare this will often not be possible in the case of orders issued by the commanders of small units.

2. When, owing to lack of time, it is necessary to issue orders in telegraphic form or by word of mouth, the sequence given in Sec. 61 will always be preserved.

63. Execution of orders

Unexpected local circumstances may render the precise execution of the orders given to a subordinate unsuitable or

impracticable. In such circumstances the following principles will guide an officer in deciding on his course of action :—

- i. A formal order will never be departed from, either in letter or spirit—(a) so long as the officer who issued it is present ; (b) if the officer who issued the order is not present so long as there is time to report to him and await a reply without losing an opportunity or endangering the command.
- ii. A departure from either the spirit or letter of an order is justified if the subordinate, who assumes the responsibility, bases his decision on some fact which could not be known to the officer who issued the order, and if he is satisfied that he is acting as his superior would order him to act were he present.
- iii. If a subordinate neglects to depart from the letter of his orders when such departure, in the circumstances of (ii) above, is clearly demanded, he will be held responsible for any failure which may ensue.
- iv. Should a subordinate find it necessary to depart from an order he should immediately inform the issuer of it and the commanders of any neighbouring units likely to be affected.

64. *Clearness*

Orders, instructions, reports and messages should always be :—

- i. Legible in a bad light.
- ii. So clear that the recipient should have no difficulty

in grasping without delay the meaning of the wording.

- iii. So worded that there is no chance of misunderstanding.
- iv. Precise as regards time and place.
- v. As brief as possible consistent with clearness.

65. Rules for writing orders, reports and messages

1. Time.

- i. Time will be described by reference to the 24-hour clock. Groups of four figures followed by the word "hours" will be used. The first two figures represent the hour and the last two the minutes past the hour.

Example :—

"0001 hours" : one minute past midnight.

"0900 hours" : nine o'clock in the morning.

"1200 hours" : noon.

"1635 hours" : twenty-five minutes to five in the afternoon.

The hour "2400" will not be used. Messages despatched at midnight will be timed 2359 hours or 0001 hours.

The word "hours" will not be used in the "Time of origin" space on the message form (A.F. C 2128).

In verbal messages each number is to be pronounced separately, zero being named "owe."

Example :—"0317" ; pronounced "owe-three-one-seven."

- ii. Dates will be shown in the form "3 Sep 25" and not in the numeral form "3/9/25." The names of months will be abbreviated by the use of the first three letters.

The month and year will not be inserted in the "date" space on the message form (A.F. C 2128).

- iii. A night will be described thus :—

"night 29/30 Sep" or

"night 30 Sep/1 Oct"

"midnight 31 Dec./1 Jan."

- iv. Unless otherwise stated the time of arrival of a body of troops at a point is the time of arrival at that point of the head of the main body.

2. Place.

- i. *Names of Places* will be in block capitals, thus **LONDON**, and are to be described exactly as spelt on the maps in use.

- ii. *Map reference*.—If a map is referred to, the one used must be specified unless in the sender's knowledge no confusion can arise by the omission of the information. When stated the identity of the map used will be given under the heading of an order, instruction or report, or at the commencement of a message.

The first time a place is mentioned it will always be followed by its co-ordinates if the map referred to is squared or gridded ; otherwise it will be denoted by the most suitable of the following methods :—

- (a) Point of compass and distance from a reference point.—

Example: "Cross roads $\frac{1}{2}$ mile S.W. of
HASELEY."

- (b) Actual compass bearings, all bearings being true bearings.—

Example: "cross roads true bearing 225°
from **HASELEY Church.**"

- (c) By description.—

Example: "Crossroads $\frac{1}{2}$ mile S.W. of second
E in (not of) **HASELEY**," the letter
referred to being underlined.

The four cardinal points of the compass are to be written in full, the abbreviation "N," "S," "E" and "W" only being used in denoting intermediate points.

Example: "South of **HASELEY**" not "S. of
HASELEY"—"S.W. of **HASELEY**"
not "South-west of **HASELEY.**"

- iii. *Roads* are indicated by place names on them, care being taken to name sufficient places to ensure that the road intended is followed.

- iv. *Positions and areas.*—Our position will be described from right to left, looking in the direction of the enemy. The enemy's position will be similarly described, looking in the direction of our own troops.

An area will be described by taking the northernmost point first and giving the remaining points in clockwise order.

- v. *River banks* may be described as "right" or "left" it being assumed that the writer is facing down stream. Alternatively they may be described

with reference to the compass, as for example, the "north bank" or "N.E. bank" being that bank which lies generally to the north or north-east of the river.

3. Except in the foregoing cases, indefinite and ambiguous terms such as "right," "left," "before," "behind," "front," "rear," "on this side of," &c., must not be used, unless it is made quite clear to what they refer. If the term "right" or "left" is applied to our own forces in retirement it is to be understood that it refers to the original right or left looking towards the enemy.

4. Anything of an indefinite or conditional nature such as "dawn," "dusk," "as far as possible," "should" or "may" is to be avoided.

5. Compass bearings will invariably be given as true bearings.

6. Personal names and the word "NOT" should always be written in block capitals.

7. In detailing units or formations from which a portion is excluded, the unit or formation will be named and the words "less" appended, *e.g.*, "R F one, less 1 coy."

8. Abbreviations will be used when there is no doubt of their meaning. The writer is responsible that abbreviations used are intelligible to the reader.

66. *Reports and messages in the field*

1. Reports (and messages) in the field should :—

- i. Be arranged in the same sequence as that given for operation orders (*see* Sec. 61), only such headings being used as are applicable.

- ii. Be numbered and dated.
- iii. Have the number or designation of the sender and recipient given in the approved abbreviated form (see F.S.R., Vol. I., 1926).

For example—a message sent to Headquarters, 4th Battalion, Somerset Light Infantry, by O.C. "A" Company of that battalion should be addressed "SOM. L.I. four" from "A COY."

- iv. Have the hour of despatch noted at the end of the message.
- v. Be signed by the individual sending the message, giving his rank and appointment and his formation or unit.
- vi. The name of the place where the sender is will only be given if it is considered essential to ensure intelligibility.
- vii. For messages A.F. C. 2128 and envelope C. 398 will be used, if available.

Copies of all messages will be kept by the originator. Specimens are given in Appendices I and II.

2. *Verbal reports.*—Reports and messages should always be in writing when time permits, but in urgent cases they may be verbal. Duplicates of written and précis of verbal reports should be kept.

3. A verbal report should be given without hurry or excitement; otherwise both hearer and speaker are liable to become confused.

Accuracy in the transmission of verbal messages cannot be attained without constant practice. The messenger should always be made to repeat the message before leaving.

4. No telephone conversation is secret. Messages spoken on the telephone attachment to the fullerphone are as liable to interception as any other telephone message.

67. *Reports and sketches*

1. *Information.*—In reporting on an enemy, accuracy as regards times, places, the position, approximate strength, branch of the service, formation and direction of march of the troops reported on, is of first importance.

2. It is more important that the information contained in a report (or sketch), should be relevant and accurate, and should arrive in time to be of use than that the report should be long or elaborate.

3. It is most important for the recipient of a report to be able to gauge the reliability of the information which it contains. For this purpose the origin of the information should always be stated in the text of the message, *i.e.*, whether it is the result of personal observation, of observation on the part of subordinates, or of statements made by inhabitants, and whether the last named are considered reliable or not.

Information obtained by personal observation or by the observation of a trustworthy subordinate is called "direct," that obtained by statements of others is called "indirect."

4. "Negative" information is information as to the absence of the enemy from certain places at certain times. It is most valuable, both as a check on other information received and as an indication to commanders as to the probable movements and plans of the enemy. It should be periodically sent in.

5. *Sketches.*—A plan or panorama sketch is a useful adjunct to a report, and it is often possible and convenient to dispense

with the report and to convey all essential information on the plan or panorama. Clearness and relevancy are required, not artistic effect. Ranges in yards to conspicuous points should be indicated on such sketches.

A plan should be drawn roughly to scale, the scale being indicated both by drawing and in words.

In countries which have been surveyed, plan sketches will normally take the form of enlargements of existing scale maps, such additional information as is relevant being shown on the enlargement.

6. Important points, *e.g.*, width of a road or stream, whether a railway is single or double, &c., should be described in words or figures.

7. The true north should always be indicated.

8. The place from which a panorama sketch is executed, and the direction in which the sketcher is looking, should be clearly indicated.

9. A table of conventional signs used in military sketches and further information regarding the compilation of reports is given in the Manual of Map Reading and Field Sketching.

CHAPTER IX

(A) WORKING PARTIES AND TASKS

(B) ASSAULT BRIDGING

(A) WORKING PARTIES AND TASKS

68. *Field works*

Field works may be divided into two classes :—

- i. Work for which units or formations other than the engineers are responsible.

This will be carried out under the orders of infantry commanders with materials supplied by the engineers, but without engineer assistance or supervision other than technical advice or minor assistance in technical details. The provision of technical advice or minor assistance is the duty of engineer officers attached for the purpose to infantry formations.

- ii. Work for which the engineers are responsible.

This will be carried out solely by engineer units, or by engineer units with the assistance of working parties from infantry or other units, or by civilian labour. In work of this nature there are two principal officers involved :—

- (a) The engineer officer in charge of the work.
- (b) The officer in command of the working party.
(In minor works one officer may act in both capacities.)

69. The engineer officer in charge of the work

The engineer officer in charge of the work will be responsible for:—

- i. Making the preliminary reconnaissance.
- ii. Tracing out the work.
- iii. Clearly specifying what the task is and how long it is to take.
- iv. Demanding the working party.
- v. Demanding in addition a covering party if required.
- vi. Supplying materials and extra tools if necessary.
- vii. Supplying guides for the working party.
- viii. The technical correctness of the design and seeing that the work is completed as designed.

70. The officer in command of the working party

The officer in command of the working party will be responsible for:—

- i. The disposal of his men on the work.
- ii. Issuing and enforcing all orders as regards smoking, lights, talking, &c.
- iii. Seeing that there is no idling and that no man leaves his task unfinished without reference to the officer in charge of the work.
- iv. That the work is completed in the time allotted and in accordance with the design explained to him.
- v. Deciding, in the event of serious casualties to the working party, whether the men should be temporarily withdrawn or an attempt made to complete the task at all costs.

If heavy casualties are expected, the authority ordering the work must give definite instructions, both to the engineer officer in charge of the work and to the officer commanding the working party, as to its urgency.

71. The officer in command of the covering party

The officer in command of the covering party is responsible for its tactical disposition, for protection during the period that work is in progress and for making adequate arrangements for communication with the working party.

72. Action in case of attack

If the enemy attacks, the senior officer on the spot, whether engineer or not, is responsible and must give orders.

73. Demand for and distribution of working parties

1. The engineer officer in charge of the work will decide on the actual number of men he will require and will make his demand in terms of a number of men for a specified period, e.g., 150 men for four hours. The officer who details the working party will arrange that it is composed of complete units (battalions, companies or platoons) whose numbers approximate most closely to those originally demanded. This method ensures that the men work under their own officers and that a proportion of N.C.Os., stretcher bearers, &c., are also detailed. It may not always be possible to adjust the numbers exactly, but the importance of detailing complete

units, instead of detachments of certain fixed numbers, is paramount.

2. The officer commanding the working party will decide, in consultation with the officer in charge of the work, how best to distribute his men ; this should be done by platoons and companies, so that each commander can interest himself in the work of his men.

The limits of each platoon and company should be clearly marked, and each guide should be shown the point to which he is to bring his party and the extent of his task.

The arrival of working parties should be so timed that no party has to wait while another is being put on its task. In normal times the rate of arrival should be 50 men (actual workers) at 15 minutes' interval and, when harassing fire is heavy, 25 men at 15 minutes' interval.

74. *Filing on to the work*

1. There are various methods of filing on to the work ; two in general use are given below :—

- i. *Extending a working party from the left.*—An officer or N.C.O. will stand at the left of the line on to which the squad is to be extended, prepared to pace or measure out each man's task. The squad will be formed into single rank at a convenient distance from the line and marched up in single file, tools at the trail and rifles slung, at right angles to the line, until the leading man is within two paces of the officer (or N.C.O.) charged with pacing out the task. The officer will then indicate the left of the task and the leading man will step forward

and drive the point of his pick into the ground at that spot, helve to the rear.

The officer will then pace out the task and the man will lay his shovel to the right along the line of his task, blade to the left and face downwards. The second and remaining men will wheel to the right until opposite the left of their tasks when they will wheel to the left and carry on as detailed for the leading man.

After each man's task is paced out he will wait till the remainder of the squad in rear of him are clear and will then unsling his rifle, turn about, take six paces, ground arms, return to his former position and lie down until the order to commence work is given.

In extending from the *right* the procedure is similar to the above, the men wheeling to the left and right instead of to the right and left.

- ii. *Alternative method.*—The leading man goes right through to the far end of the work and the remainder space themselves out behind him along the line of the work. The commander of the party then checks and corrects their intervals, starting from the leading man and working backwards. By this method the men are always well extended and, although it takes slightly longer than the first method, it is usually necessary to adopt it in front-line work. The tendency to close up when the front man halts, for fear of losing touch in the dark, must be checked.

2. For instructions as to the issue, carrying and use of tools (including "Pick and Shovel Drill"), see Sec. 6, Manual of Field Works (All Arms), 1925.

3. Working parties of second or subsequent reliefs on trench work should not be allowed to move along the partially dug trench unless the tactical situation demands that they should do so.

75. Allotment of tasks

1. Work may be carried out either by :—

- i. *Task work*, i.e., a definite amount of work is given to each individual or preferably each section, platoon or company.
- ii. *Time work*, i.e., the working party is required to work for a certain number of hours.

2. Task work should be given whenever possible and each party must be allowed to withdraw as soon as it has completed its work. Supervision by the company officers must be strict, and the tasks, which are usually on the easy side, must be rigidly enforced.

It has been proved that the best is got out of a working party in four hours—after that period the men tire rapidly.

76. Arms and equipment

When working in close contact with the enemy care must be taken that the working party has its rifles close at hand for use in emergency. In rear areas arms and equipment may be left under guard in a convenient spot.

In the forward areas and areas liable to gas attack, anti-gas respirators must always be carried in the "alert" position.

(B) ASSAULT BRIDGING

77. *General*

1. Infantry will frequently be required to force the passage of a water obstacle (stream or canal) in close proximity to the enemy.

2. For this purpose the engineers of the field army carry special infantry foot-bridge equipment, called "Kapok Assault Bridges," consisting of cork floats which can be joined together with leather straps and are provided with a trench-board roadway. Each float is provided also with carrying handles (see Sec. 88, 4, Manual of Field Works (all Arms), 1925).

3. It is the duty of the engineers to provide material for the bridges. It is also their duty to advise and supply technical assistance in "forming bridge."

It is the duty of the infantry to carry forward and launch the assault bridges when they have been formed and, as the number of engineers available in the attack will only permit of a few being detailed for any particular bridge, it is essential that all ranks of the infantry should be trained in the handling and launching of these bridges. (See Sec. 7, 2, iii, Vol. I, 1926.)

It is advisable that the bridging parties should have an opportunity of handling the bridge beforehand and, if possible, practice in launching it. In mobile warfare, however, the time available will seldom permit of this.

78. *Tactical considerations*

1. As in all operations of war, surprise is the essence of success and governs all preliminary steps taken prior to the launching of the bridges.

2. The forcing of the passage of a water obstacle is a tactical operation for which the commander of the unit or formation concerned is responsible. It is he who decides, with the assistance of his technical adviser, the engineer commander, on the sites for the bridges and where they are to be put together.

3. The infantry officer responsible for carrying forward and launching each bridge will be detailed by name and these officers, accompanied by officers of the engineers, if available, must carry out the detailed reconnaissances for the selection of the actual points of passage.

4. The enemy must be kept in ignorance of the points selected, and with this object all preliminary preparations must be carefully concealed, while every effort must be made to deceive the enemy. For this reason, obvious crossing places which may be easily and quickly bridged are often more difficult to cross on account of fire than wider or less easy places.

5. The actual crossing will probably be carried out just before it gets light, or if for any reason it is necessary for it to take place in daylight, under cover of a smoke screen. On a bright night advantage may be taken of periods when the moon is obscured by clouds.

The important consideration is that the advance subsequent to the crossing should not have to be undertaken in the dark.

6. It must be remembered also that darkness greatly increases the difficulty of bridging operations and that in consequence more time will be required for the preliminary

reconnaissances and the selection of bridging sites for crossing at night.

79. *Reconnaissance*

1. Prior to the ground reconnaissance (Sec. 78, 3), the study of large scale maps and aeroplane photographs, both vertical and oblique, will be valuable.

2. As far as time permits, information must be obtained on the following points :—

- i. Nature and width of gap.
- ii. Strength of current.
- iii. Nature and slope of banks.
- iv. Approaches.
- v. Possibility of deploying troops on the far bank.
- vi. Positions for covering fire of rifles and automatic weapons.
- vii. Nearest suitable place to which bridging material may be brought by transport.
- viii. Nearest suitable place for the assembly of the bridge under cover, from which it may be carried forward for launching.
- ix. The route from this point to the point of passage.
- x. Width and nature of any subsidiary obstacles on this route and arrangements necessary to cross them.
- xi. If the stream is tidal, the rise and fall of the tide and the hour of high and low water, which may be the ruling factor.

80. *Covering parties*

1. Covering parties must be allowed ample time to get into their positions without the necessity for hurried movement.

It may sometimes be necessary for some portion of the covering party to be conveyed to the far bank before the bridge is launched, the remainder being sent across first, when the launching is completed. Occasionally, however, the covering party may find better positions on the near bank.

Covering parties must be in position before the bridges are put across and must not rush to their positions simultaneously with the bridge-carrying parties.

2. Should it be necessary for the covering party to open fire to protect the launching of the bridges, the heaviest volume of fire possible must be opened. Flanking and overhead fire from automatic weapons will be of great value and should be supplemented when necessary by artillery.

3. Surprise may sometimes best be effected by not attracting attention by opening fire, or by attracting the enemy's attention away from the points of passage, and smoke may often be usefully employed.

81. *Forming bridge*

1. Assault bridges will usually be made up beforehand at the forming-up line so that the whole bridge can be lifted and carried forward at once and launched as a whole. The joints between each pier allow of the bridge being carried over uneven ground.

2. As the width of the gap can often only be judged and not measured accurately, the bridge is usually made up longer than the estimated width of the gap. If too long, the spare

bays can be detached as soon as the forward end has been secured. The weight of the bridge itself may be sufficient to hold it to the banks unless there is a strong current, in which case the ends must be made fast to pickets or other holdfast on the banks.

82. *Carrying*

1. Carrying is effected either by hand or on the shoulders ; the latter is preferable when the bridge has to be carried any distance.

2. The carrying party must be sized so that no undue weight is placed on any individual in the party. Detailing the party along the bridge, picking it up, and carrying it require careful practice in order that all may move together in the required direction without noise or confusion. If the bridge has been carried on the shoulders, it must be lowered into the hands before being launched.

3. Spare numbers must be detailed for the carrying party, and the necessity for absolute quietness must be impressed on all concerned.

4. Tapes, if available, should be laid from the forming-up line to the crossing beforehand, or, if the latter cannot be reached by the bridging parties, they should be unrolled as the bridging parties advance. Illuminated signs should be provided on the forming-up line by night ; lights in petrol tins pierced with small holes are suitable as they cannot be seen from aeroplanes.

83. *Launching*

To avoid delay it is essential that the bridge should be brought direct to the exact spot chosen for the crossing.

Launching is usually effected by pushing the bridge endways directly across the stream, or, if there is a current, with the forward end pointing slightly up-stream. The bridge is guided as it is passed from hand to hand by one or two pairs of men who should get as far into the water away from the near bank as possible. One or two men will travel across the stream on the forward end of the bridge to effect a junction with the far bank and secure the bridge end to the bank. Where there is a strong current, or even a very strong cross wind, it may be necessary to provide light guy ropes, to keep the bridge straight while it is being launched. Men must be specially detailed for this beforehand.

84. Action subsequent to launching

1. The fact that the bridge is ready for use should be communicated immediately, by a pre-arranged signal, to the officer commanding the troops detailed to cross it.

2. The bridging parties must have definite orders as to their action subsequent to the successful launching of their bridge; arrangements should be made for all personnel, except the essential minimum required to remain at the bridges for the purposes of maintenance, to clear away from the bridge as soon as it has been launched.

3. The maintenance party will be divided in two, half on each bank; they should remain clear of the bridge and keep it under close observation with a view to putting right immediately any defect, or repairing any damage, that may occur. A party must keep watch above the highest up stream bridge to divert floating objects which might destroy the bridges down stream.

4. The leading troops detailed to cross the assault bridges (unless the carrying party is detailed for this duty) should remain under cover until the bridges are secured on the far bank and ready for crossing. They should then cross as rapidly as possible.

5. Under no circumstances should the attacking troops follow the bridge-carrying party so closely that they have to halt on the bank and wait until the bridge is ready.

6. Arrangements must be made so that in the event of failure to launch a bridge, or its destruction by fire, it will be possible to divert the troops detailed to that bridge to other bridges which have been successfully launched.

85. Traffic control

1. The importance of good traffic control cannot be over-emphasized.

2. During assault bridging operations, congestion is very liable to occur, especially on the near bank. On the other hand, if the troops are not fairly close up, touch may be lost.

3. A careful system of control posts and connecting files is therefore necessary, so as to ensure that the forward movement of troops can be properly regulated and, if necessary, stopped altogether should the situation at the bridges demand it.

4. One infantry officer will be detailed for each assault bridge to ensure that the troops do not bunch in the immediate vicinity of the bridges before crossing.

A staff officer will normally be detailed to control the advance of units towards the bridges on each bridge front.

APPENDIX I

To :—

“ W. Yorks one ”

No. 7

Reference* Map :—

Sheet

3 Sep 25

1.—(a) Enemy (estimated strength one platoon) holds FAIRLEY COPSE.

(b) Forward Platoons “ C ” Coy. are now established on MILES HILL and “ D ” Coy. is making progress towards GREAT WOOD apparently unopposed.

2. Intend to turn right flank of enemy in FAIRLEY COPSE.

3. Am sending two platoons to GREAT WOOD to assault FAIRLEY COPSE from that flank under cover of smoke and small-arm fire from company reserve.

Signal for assault two white Vêry lights, probable time about 1230 hours.

4. Have lost 3 killed and 8 wounded.

5. Present H.Q. point 138. Am moving to S.W. corner of FAIRLEY COPSE as soon as captured.

B. JONES, *Capt.*,
Comdg. “ A ” Coy.
W. Yorks one.

Time 1140.

* Unnecessary if no confusion can arise from its omission.

APPENDIX II MESSAGE FORM

ARMY FORM C 2128

 SERIAL NO.
OF TELEGRAM.....

		SYSTEM	SENDER OR	READER	FOR POSTAGE STAMPS AND DATE STAMP
OUT					
IN					
TIME OF DESPATCH					
<div>IN</div> <div>CALL</div> <div>OUT</div>					
SERVICE INSTRUCTIONS (and Office of Origin (P))		Priority Prefix		Time Handed in (P)	WORDS (P)
SPECIAL INSTRUCTIONS					
CHARGE					

To

W. Yorks one (or cipher call if allotted)

FROM "A" Coy.		Groups in Text	
Originator's Number—7	Date 10	In reply to Number	
Energy	about	onc	holds
BUDD	FM	AAA	pls
A	and	C	established
HILL	138	and	COPSE
respectively	AAA	Intend	BUDD
FM	from	WILLY	AAA
Am	asking	A	C
Coy's	to	assist	covering
fire	AAA	Will	1230
hours	AAA	Present	hillock
K	2146		

Time of Origin 1140	For Signal T.O.R.	Use Only
Degree of Priority and Originator's Signature	* THIS MESSAGE MUST NOT BE SENT BY WIRELESS IF SENT BY WIRELESS, THIS MESSAGE MUST BE SENT * AS WRITTEN * IN SUPPLY * ORIGINATOR TO DELETE LINES NOT REQUIRED†	
B. JONES,		
Capl.		
NOTE.—Spaces marked (P) are for Paid Work only		

† The deletion of the words not required is of the first importance.

INDEX.

A

	PAGE
Abbreviations, use of in messages and reports	226
Administrative instructions, use of	218
Advanced Guard—	
— Armoured cars, role of when employed with	142
— Artillery, movement and action by	144
— Composition, strength and disposition of	140
— Contact with the enemy, action on making	144
— Distance from main body, considerations	141
— Distribution on the road	141
— Encounter attack, action by	59
— Halting of, factors regulating	144
— Headquarters, position of	144
— Main guard, composition of	143
— Mounted troops, control and conduct of... ..	142
— Movement through woods	187
— Night marches, necessity for	198
— Objectives for, suitable nature of... ..	145
— Protective detachments, for security, strength of	4
— Responsibility for protection, termination of	160
— Retreating force, composition and duties of	145
— Role of, changing to outposts	160
— Success of, factors deciding	145
— Tanks, order of march when allotted	144
— Tasks, carrying out of	140, 144
— Vanguard, composition and duties of	143
Aeroplanes, Cl. R., identification of	27
Air observation, concealment from	174 <i>et seq.</i>
Air photographs—	
— Attack, necessity for careful study in the	42
— Information necessary for plan of attack, by	52
— Oblique, nature and use of	31

Air photographs—*contd.*

PAGE

— Study of to anticipate topographical obstacles	33
— Value of for night attacks	201

Aircraft—

— Communication with, methods	28 <i>et seq.</i>
— Co-operation, with	27 <i>et seq.</i>

Ammunition—

— Battalion, normal distribution of	212
— " reserve, S.A.A. object, direction and control of	215
— Brigade reserve, duty of commander	212
— " " formation of	212
— Casualties, duty in collection of	90
— Company, R.A.S.C., particulars of the S.A.A. section	211
— Distribution of in front of railhead, detail	210
— Dropping of, from aeroplanes	32
— Exhaustion of in action; action taken	7
— Pack animal, company; control of and movement	215
— Refilling points, siting of	211
— Rounds carried by men, increase of normal	215
— S.A.A. section, action of commander on forward move	212
— Supply in battle, emergency	212
— " principle of... ..	210
— Anti-gas respirators, wearing of... ..	129

Anti-tank defence—

— Artillery detailed for	23
— " employment for	17, 18
— Guns, general role of	117
— Provision of in siting trenches	116

Approach march—

— Formation during, considerations	33
— Methods of conduct, in encounter attack	60
— Positions of assembly; considerations on the	60

Areas, method of describing	225
------------------------------------	-----

Armoured cars with advanced guard	142
--	-----

Arms—

— Laying down, responsibility for	7
— Surrender by enemy, to lay down first	8

Artillery—

— Advanced guard, movement and action by	144
— Barrage fire in the attack, limitations to	68

Artillery—contd.

	PAGE
Close country fighting, employment	180
" support, control and use of	69
Co-operation in the encounter battle	68
" with in close and wooded country, difficulty in... ..	42
Defence, tasks in	113
Employment, in defence in mobile warfare; considerations	113
Escorts; provision and duties of... ..	23, 24
Fire, maximum rate for mobile warfare	18
" plan in defence, object of	113
" rapidity of opening	114
Inter-communication with, methods and responsibility	19, 20
Liaison officer, duties of	20
" with commander	19
Natures of, details for support of infantry	16 <i>et seq.</i>
Night operations, employment in	202
Outpost, tasks for	160
Role of in the attack	20 <i>et seq.</i>
" in the defence	22 <i>et seq.</i>
Smoke shell, use of by	49
Support, tasks determined by commander of troops	21
Task of in battle	16
Village fighting, use of in	193
Wood fighting, employment in	184

Assault—

Definition of and considerations	36
Troops committed to cannot be diverted	58

Assault bridging—

Carrying forward to crossing	240
Forming of	239
General considerations	236
Launching, failure to or destruction of	242
" of, method and subsequent action	240 <i>et seq.</i>
Tactical considerations	236 <i>et seq.</i>
Atmospheric conditions as affecting concealment	176

Attack—

Artillery in; role of	20 <i>et seq.</i>
Battalion in, conduct of	72 <i>et seq.</i>
Close country, considerations	178
Company in, conduct of	81

Attack—*contd.*

PAGE

— Control during, importance of	55
— Co-operation of all arms in, responsibility	54
— Covering fire, responsibility for	14
— Deliberate, general considerations	93 <i>et seq.</i>
— Direction of, compass bearings to be given	78
— Enemy, movement to rear, considerations	8
— Fire as the basis of	32
— „ in, conditions for opening	38
— „ opening of in the ; important considerations	82
— „ support in, importance of	2
— Gas, if expected, considerations	43
— General considerations	52 <i>et seq.</i>
— Ground ; reasons for careful study of	42
— Headquarters of commander, position of	46
— Launching of against unbroken wire obstacles	57
— Line of, selection of in the deliberate attack	95
— Machine guns, duties of in the	67
— Main, definition of	35, 36
— Momentum, maintenance of	63
— Nature of, governing factor	56
— Night, general considerations	202 <i>et seq.</i>
— „ object of	196
— Numbers employed at outset, considerations	58
— Orders ; points to be covered when issued	71
— Organized defences, necessity for co-operation of other arms	54
— Plan of, encounter battle information necessary	59
— Reconnaissance during, duty of	74
— Smoke, method of dealing with	51
— Surprise in, importance of	53
— Tanks in, considerations on employment of	69 <i>et seq.</i>
— Tasks allotted to infantry in	57
— Villages, conduct of	190
— Woods, conduct of	183 <i>et seq.</i>

B**Barrage—**

— Following of in deliberate attack	95
— Loss of, action by infantry following	96

Barrage fire—

	PAGE
— Artillery ; limitations to in the attack	68
— „ use of	16
— Defence, considerations affecting	113
— Object of in deliberate attack	95
— Rate of advance	96
Basis for infantry tactics ; unit forming	84

Battalion—

— Brigade reserve, disposal of	115
— Distribution of in attack ; factors determining	64
— Division of in attack ; nomenclature of echelons	62
— Encounter battle ; action in	58 <i>et seq.</i>
— Formations suitable in early stages of attack	65
— Forward, disposal of in defence	114
— Headquarters, allotment of fire positions for	115
— Orders for encounter attack, issue of	71
— Outpost duty	161 <i>et seq.</i>
— Reserve, position and distribution of	67
— „ strength, control and use of	63, 64

Battalion commander—

— Action by on allotment of sector in defence	109 <i>et seq.</i>
— „ receipt of orders ; encounter battle	59, 62
— Headquarters of in attack and defence	46
— Reconnaissance by for defence, conduct of	110

Battalion reserve—

— Company in, formations to be adopted	81
— Deliberate attack, use of	96
— Employment of ; important considerations	74
— Fire positions to be allotted	115
— Reforming of	75
— Strength, control and use of	63, 64

Battle—

— Aim of all commanders in	46
— Artillery in, task of	16
— Cavalry in, employment of	15
— Considerations, general	1
— Course of, influence of commander on	44
— Defensive, aim of	2
— „ conduct of	117 <i>et seq.</i>
— Dispositions, factors governing	32

Battle—contd.

	PAGE
— Encounter, the battalion in	58 <i>et seq.</i>
— Liaison in, necessity for success in	46
— Outposts, nature of	173
— Phase of, governs tactical formation adopted	33
— Reports during, importance of sending back	49
Bayonet and rifle, general	8
" use of when ammunition is exhausted	7
" fixing of at night	129
" " by sentries	169
Billeting area, fixing of	157
Bivouac area, fixing of	157
Breastworks, use of in woods	190
Bridges, demolition of in withdrawal	155
Bridging, assault, general considerations	236 <i>et seq.</i>
Brigade reserve, disposal of a battalion in	115
" " siting of, important points	115

C**Cavalry—**

— Comparative value of	15
— Employment of	14
— Weapons, detail of	14

Characteristics—

— Close country, attack in	178
— Deliberate attack, main	93
— Machine gun	12
— Night attacks	202
— Rifle	8

Close country—

— Attack in, considerations	178 <i>et seq.</i>
— Defence in, considerations	180
— Definition of	177
— Direction and liaison, difficulty in maintenance	42
— Fighting, important characteristic	178
— Influence on tactics	177
— Reconnaissance must be thorough	177
Close reconnaissance aeroplanes, identification of	27
, support artillery, control and use of	69

Commander—		PAGE
— Aim of, in battle ... ..	...	46
— Brigade ammunition reserve, duty of ... ..	...	213
— Defensive by, factors governing action of ... ..	...	99 <i>et seq.</i>
— Duties in battle ... ..	...	44
— Fire unit, responsibilities ... ..	...	38
— Influence on the course of the battle, by ... ..	...	44
— Leadership, successful, essential attributes of ... ..	...	5 <i>et seq.</i>
— Position of in column, in night marches ... ..	...	200
Communication from enemy to be regarded as suspicious ... ..	...	8
Company—		
— Battalion reserve, formations when in ... ..	...	81
— " " responsibilities of commander of a ... ..	...	81
— Disposition in attack, considerations ... ..	...	78
— Distribution in initial stages of attack ... ..	...	79
— Division of in attack, nomenclature ... ..	...	80
— Formations, in early stages of attack ... ..	...	80
— Forward, duty of when committed to the attack ... ..	...	63
— " replacement of after an attack ... ..	...	76
— " " in the deliberate attack ... ..	...	96
— Headquarters, position of in defence ... ..	...	123
— Orders for encounter attack, issue of ... ..	...	77
— Outpost, acting as ... ..	...	165 <i>et seq.</i>
— Reserve, reconstitution of after use ... ..	...	84
— " use of ; important considerations ... ..	...	83
Company commander—		
— Battalion reserve, duties of ... ..	...	124
— Organization of defended locality by ... ..	...	120
— Outpost duty, detail for ... ..	...	165 <i>et seq.</i>
— Position of during attack ... ..	...	78
— " in attack and defence... ..	...	46
Compass—		
— Bearings always to be given ... ..	...	67
— Bearing of direction of attack to be given ... ..	...	78
— Bearings to be given as true bearings ... ..	...	226
— Close country, use of ... ..	...	179
— Night marches, use of in ... ..	...	198
— Points of, method of describing ... ..	...	226
— Use of in wood fighting ... ..	...	183

Concealment—		PAGE
— Air observation, from	174	<i>et seq.</i>
— Dummy trenches, use of for	101	
— Effect of atmospheric conditions on	176	
— Limbered wagons	175	
— Movement on roads	176	
— Sentries	169	
— Value of shadows for	175	
Consolidation—		
— Definite plan for, considerations	76, 77	
— Explanation of term and use of	36	
Contact, gaining of, role of infantry when	34	
Control—		
— Defensive, counter-attack troops	102	
— Maintenance of, in the attack	55, 82	
— Section commander, important considerations	91	
Co-operation—		
— Aircraft, general	27	<i>et seq.</i>
— Artillery, general	16	<i>et seq.</i>
— „ difficulty in close and wooded country	42	
— „ „ of in wood and village fighting	182	
— „ „ in the encounter attack	68	
— Attack, responsibility of all commanders	54	
— Cavalry, general	14	<i>et seq.</i>
— Engineers, general	24	
— Necessity for, with other arms	54	
— Sections within platoon; necessary for success in attack	89	
— Tanks, general	25	<i>et seq.</i>
— „ in the encounter attack	69	
— „ „ in wood fighting	186	
Counter-attack—		
— Immediate, close country	181	
— „ „ opportunity for	123	
— „ „ value of and occasion for	119	
— Nature of	116	
— Preparation and consideration by units in reserve	116	
— Rear guard, necessity for and conduct of	153	
— Success dependent on fire and movement	14	
— Tank; use of tanks against	25	
— Troops, defensive; definite tasks assigned	123	

	PAGE
Counter-offensive in defence, importance of	3
Cover, chief types of	43
Covering fire—	
— Absence of, acting during ; considerations	87
— Deliberate attack, provision of	95
— Lewis guns, employment of for	88
— Use of, necessity for	41
Covering party—	
— Assault bridge crossings	239
— Protection during reconnaissance	110
— Working party, responsibility of commander	232
Covering position—	
— Flank guards, necessity for	147
— Necessity for in defence	100

D

Dates, method of showing in written orders, &c.	214
Defence—	
— Anti-tank, provision of in siting defences	116
— Artillery in ; role of	22 <i>et seq.</i>
— " tasks of	113
— Battalion in mobile warfare, principles	109 <i>et seq.</i>
— Battle in ; duty of all troops to resist to end	118
— Close country, considerations on	180 <i>et seq.</i>
— " important consideration	178
— Communication in, when enemy uses smoke	51
— Company in battalion reserve, distribution of	123, 124
— " considerations in mobile warfare	119 <i>et seq.</i>
— Comparison, mobile and position warfare	119
— Discipline in, maintenance of	133
— Fires, lighting of	129
— Fire, infantry ; use of in	14
— " in, considerations in opening	39
— " as the basis of	32
— Gas attack, if expected ; considerations	43
— General considerations	99 <i>et seq.</i>
— Ground ; reasons for careful study of	42
— Headquarters of commander, position of	46
— Infantry in, responsibilities of	113

Defence—contd.

	PAGE
— Infantry, responsibility for construction of	134
— Machine gun in, value, role and siting of	113
— Manning of, times for	130
— Plan of, battalion, basis for	110
— „ battalion; important considerations	111 <i>et seq.</i>
— Platoon in, considerations	127 <i>et seq.</i>
— Position warfare, considerations	103 <i>et seq.</i>
— Principles, guiding	37
— Rations and supplies, arrangement for	130
— Reliefs, procedure during position warfare	135 <i>et seq.</i>
— Reserve in, distribution of	105
— Sanitation, to receive attention in	133
— Section in, considerations	130
— Sentries, posting of by day and night	129
— Siting and construction of, responsibility for	25
— Success by enemy in, action to be taken	118
— Successful, fire as the predominant factor	112
— Tanks in, role of those allotted	117
— Villages, considerations and conduct of	193 <i>et seq.</i>
— Wire obstacles in, object in siting	113
— Woods, conduct of in	187 <i>et seq.</i>

Defended locality—

— Company, organization by	109 <i>et seq.</i>
— Composition of	115
— Defence of to the last man	130
— Depth of, factors affecting	122
— Dispositions of a company in	122
— „ troops in	120
— Organization of by company in defence, stages of	119
— Platoon, organization by	127 <i>et seq.</i>
— Resistance by garrison, nature of	123
— Sited on reverse slope, provision for observation	115, 121
— Siting of, important considerations	109, 114

“Defended post” *see* “Section post.”

Defensive—

— Attitude, adoption of conditions necessitating	3
— Battle, aim of	2
— „ conduct of	117 <i>et seq.</i>
— Circumstances necessitating	103

Defensive action—	PAGE
— Commander; factors governing	99 <i>et seq.</i>
— Decision by, improbability of	3
— Information to be ascertained by battalion commander ...	117
— Use, factor governing	2
Defensive position—	
— Holding of; advantages and disadvantages	3
— Mobile warfare, important considerations	105
— „ „ organization of	100
— Occupation of; considerations in selection	37
— „ by battalion, security measures	110
— Organization of; general considerations	103 <i>et seq.</i>
— Phases of development	104 <i>et seq.</i>
— Position warfare, selection and organization of, main points...	108
— Programme to be drawn up to show sequence of work ...	109
— Sectors, division of... ..	37
Delaying action, use of cavalry in	15
Deliberate attack, general considerations	93 <i>et seq.</i>
„ counter-attack, considerations	116
Detached posts, employment of	171
Direction—	
— Close country, maintenance of	179
— „ or wooded country, difficulty in maintenance	42
— Losing of, if not launched square to objective	58
— Loss of in attack, to be guarded against... ..	78
— Night marches, by stars	198
— Wood fighting, difficulty of maintenance	183, 185
Discipline—	
— Bedrock of training	5
— Defence, maintenance of in the	133
— Fire, definition of	41
— „ necessity for	41
— March, strict, to be maintained during relief	136
Dispositions, defensive; factors governing	101
Distances and intervals in the attack, considerations	66
„ night operations; considerations	200
Distribution—	
— Battalion in the attack	64
— Company in early stages of an attack	80
— Forward platoons in deliberate attack	96

E

Economy of force, importance of in the attack	...	...	...	53
Encounter-attack—				
— Company in	...	...	...	77 <i>et seq.</i>
— Frontage of battalion in, limits of	...	...	...	63
— Lewis-gun sections, role of in	...	...	...	88
— Platoon in ; conduct of	...	...	...	88 <i>et seq.</i>
— , general considerations	...	...	...	84 <i>et seq.</i>
— Section in ; general considerations	...	...	...	90 <i>et seq.</i>
Encounter-battle, phases of	...	...	...	58 <i>et seq.</i>
Enfilade fire, value of	...	...	...	39
Engineers—				
— Command of when fighting with infantry	...	...	...	24
— Detachments, command of	...	...	...	24
— Divisional, duties of	...	...	...	24
Equipment to be carried by patrols	...	...	...	127
, wearing of by forward companies	...	...	...	129
Escorts, artillery, provision and duties of	...	...	...	23, 24
Execution of orders, principles for	...	...	...	222
Exploitation—				
— Battalion, after gaining objective	...	...	...	75 <i>et seq.</i>
— Limits of ; action by company commander on reaching	...	...	...	84.
Exploitation of success—				
— Considerations necessary for successful	...	...	...	54
— Explanation of term	...	...	...	36

F

Feet, men s attention necessary	...	...	...	133
Field artillery nature and ammunition carried	...	...	...	17
, of fire, minimum in mobile and position warfare	...	...	...	121
Field works—				
— Division and execution of	...	...	...	230 <i>et seq.</i>
— How to be regarded and executed	...	...	...	25
— Responsibility of engineer officer in charge	...	...	...	231
Fighting patrols—				
— Use, conduct, and strength of	...	...	...	125
— Use of to obtain identifications	...	...	...	98
Fighting qualities, good. factors depending on	...	...	...	7

Fire—	PAGE
— Artillery control of, information necessary for effective ...	69
— „ field, maximum rate in mobile operations ...	18
— „ plan in defence, object of ...	113
— „ rapidity of opening ...	114
— „ use of in the early stages of attack ...	68
— Attack, conditions for opening ...	38
— Barrage, by artillery, use of ...	16
— Basis of attack and defence ...	32
— Control of, responsibility for ...	38
— Defence, considerations in opening ...	39
— „ the predominant factor in successful ...	112
— Discipline, definition of ...	41
— „ necessity for ...	41
— Effective; necessity for observation ...	41
— Field of, minimum in mobile and position warfare ...	121
— Modern war, the predominant feature ...	100
— Movement, and, bedrock of infantry tactics ...	13
— „ necessity to enable ...	13
— Oblique and enfilade, value of ...	39
— Opening of in action, responsibility for ...	38
— „ the attack; important consideration ...	82
— Plan organization, premature disclosure of ...	102
— Positions, allotment of to battalion H.Q. and reserve ...	115
— „ duty in choice of ...	90
— Power, importance of to the defence ...	100
— Superiority, loss of; action to regain ...	39
— „ of, in the attack importance of ...	54
— „ „ necessity for ...	14
— Support in attack, importance of... ...	2
— Surprise effect to be sought, method ...	39
— Unit commander, detail and duties of ...	90
— „ infantry ...	38
— Volume of; factors governing ...	40
Fires, lighting of in forward defences ...	129
Flag signal, nature and use of with tanks ...	26
Flags of truce, to be regarded with suspicion ...	8
Flank guard—	
— Protective detachments, for security, strength of ...	4
— Composition, role and conduct of ...	145 et seq.

Flank guard—*contd.*

— Commander, limits of responsibility to be defined	146
— Infantry, necessity for mechanical transport	147
— Responsibility for protection, termination of	160
Flares, use of in ground to air signalling	29

Formation, tactical—

— Approach march ; considerations on adoption of	33
— Attack, early stages, to be concentrated	82
— Battalion, factors governing when moving forward to attack	61
— „ in defence, factors in distribution of	114
— „ suitable for in early stages of attack	65
— Company, in early stages of attack	80
— Contact, gaining of ; considerations on	34
— Governed by the phases of battle	33
— Night advances, factors affecting	201
— „ attacks, important considerations	207
— Objects for which adopted	33
— Patrol, for day and night movement	126
— Platoon, conditions governing	85
— Regular, to be avoided in absence of cover	174
— Section in attack, considerations affecting	90
— Tanks, in the attack	69
— To be kept as big as possible as long as possible	33

Forming-up position—

— Deliberate attack, selection of	94
— Night attack, position of	204
— Tapes, use of in daylight	95

Forward zone, detail of organization	106
---	-----

Frontage—

— Allotment of in a defensive position	104
— „ to forward companies only	67
— Battalion in defence, extent of	114
— „ in encounter-attack, limits to	62
— Battery, maximum covered by	18
— Close country, considerations	177
— Company in defence, extent of	122
— „ normal, in an encounter attack	79
— Outpost company, limits to	162
— „ position, considerations	159
— Platoon, extent of ; considerations	85
— Rear guard, division of	152

G

Gaps—		PAGE
— Wire, cutting of ... ..	...	95
— responsibility for preserving after cutting ... ..	...	95
Gas—		
— Respirators, carrying of at all times ... ..	...	129
— Use of by enemy, considerations if expected ... ..	...	43
— Warning of, arrangements for ... ..	...	133
— Woods, as a suitable target for bombardment by ... ..	...	182
Grenades—		
— Fire positions; use of shell holes ... ..	...	43
— H.E., use of	10,	193
— Hand, not to be carried by patrols ... ..	...	127
— use of, precautions ... ..	...	11
— Rifle and hand, general remarks ... ..	...	10
— Smoke, limitations to use ... ..	...	50
— use of	10,	193
— Village fighting, use of ... ..	...	193
Ground—		
— Attack, reasons for careful study in the ... ..	...	42
— Defence, reasons for careful study in the ... ..	...	42
— Indicators, use of ... ..	...	28
— Open, crossing of in daylight ... ..	...	94
— Undulating, important value of for cover ... ..	...	43
— Use of	41	<i>et seq.</i>
— importance of personal reconnaissance ... ..	...	52
Guides supply of to ration parties in defence ... ..	...	130
— use of in night operations ... ..	...	199

H

Halts, night, arrangements for ... ..	...	200
Hand grenades, use of	10, 127,	193
Headquarters—		
— Advanced guard, position of ... ..	...	144
— Artillery and infantry, siting of ... ..	...	19
— Commander, position of in attack and defence ... ..	...	46
— Vanguard, position of ... ..	...	143
Hedges and bushes, value of as cover ... ..	...	43

I

	PAGE
Identifications, use of raids for obtaining	97
Immediate counter-attack, considerations	116
Indicators, ground, use of	28
Information—	
— Artillery ; commanders' duty in	19
— Cavalry, use of to supplement air reconnaissance	15
— Company commander, as relating to allotment of objectives	78
— Defence, most careful arrangements necessary	102
— Duty of all ranks in	49
— " of battalion commander during attack, in defence	118
— Encounter battle, by contact, use of	59
— Enemy obtaining from patrols, steps to prevent	127
— Inter-communication, value of a reliable system	46
— Means of obtaining in war... ..	4
— Nature of for assault bridging operations	238
— Outposts, sources of supply for	158
— Plan of attack, necessity for	52
— Preparatory phase of the defensive ; responsibility for	104
— Prisoners, particulars of, to be given	8
— Raids, use of to obtain	97
— Reports and sketches, preparation of	228 <i>et seq.</i>
— Responsibility of all commanders in	46
— Sentries in defence, to be supplied with	132
— System of obtaining, necessity for efficiency of	3
— Tanks, enemy, importance of	52
— " troops co-operating to supply	25, 26
— Task during reconnaissance by contact	34
— Written, special points for issue of	71, 78
— Initiative, subordinates, exercise of	45
Instructions—	
— Administrative, use of	218
— Clearness, notes on	222
— Use of and nature	218
Inter-communication—	
— Air to ground, methods	28
— Artillery, methods of	19
— " responsibility for	20
— Ground to air, methods	29

Inter-communication—contd.

	PAGE
— Orderlies, use of within the battalion	48
— System, reliable; value of	46
Intervals and distances in the attack, considerations	67

K

Kapok assault bridges, general considerations	236
Keep, establishment in wood and village fighting	189, 193
Klaxon horn, use of	29

L

Latrines, provision of in the defence	133
Leadership, essentials for successful	5 <i>et seq.</i>

Lewis-gun sections—

— Duty of in deliberate attack	95
— Role of in the encounter attack	88

Lewis guns—

— Covering fire by, use of for	88
— Fire, conditions for effective, against aircraft	173
— General remarks	9
— Preparation of in defence, for day and night use	133
— Use of, conditions for effective	37

Liaison—

— Cavalry, necessity for in exploitation of success	15, 16
— Close and wooded country, difficulty in maintaining	42
— Methods of obtaining	47
— Officer, artillery, duties of	20
— „ infantry, to neighbouring formations	48
— Personal, between commanders	19
— „ with artillery commander	19
— System, good; essential to success in battle	46
Light signals, use of in smoke	51
„ „ Véry, air to ground	28, 29
Lights or smoke in view of the enemy, care to be taken	133
Limbered wagons, concealment of	175
Listening posts, necessity for	121
Local protection, responsibility for	139

M**Machine guns—**

— Characteristics of	12
— Defence, enfilade tasks to be allotted to	114

Machine guns—*contd.*

	PAGE
— Defence, role and siting of	113
— Disposition of in the attack	68
— Duties of in the attack	67
— General remarks	11 <i>et seq.</i>
— Night operations, use of	208
— Oblique and enfilade fire, value of	39
— Outposts, organization of defence	160
— Positions ; use of shell holes	43
— Ranges, definition of	11
— Rear guard, importance of	150
— Support, method of organizing	13
— Tanks, employment against	25
— Use of, conditions for effective	37
— Value of in the defence	113
— Withdrawal, use of in	154
— Wood fighting, employment of	185
Main attack, definition of	35, 36
„ zone, detail of	107
Maintenance party, assault bridges	241
Manning of defences, times for	130

Map—

— Attack, reasons for careful study in the	42
— Reference, when given in orders, &c.	224
— Study of, to anticipate topographical obstacles	33
Medium artillery, nature and use of	18
Message dropping from aeroplanes	28
„ picking up, method of	30

Messages—

— Battalion, to be written in battle	47
— Clearness, notes on	222
— Field, preparation of	226
— Verbal, issue and delivery of	48
— Writing, rules for	223 <i>et seq.</i>
Mobile warfare, important considerations	61
Mobility, necessity for retention for security	4
Morale, necessity for maintaining discipline	5

Movement—

— Daylight, forward defences, forbidden	129
--	-----

Movement—contd.

	PAGE
— Enemy attack ; towards rear, considerations	8
— Fire superiority, essential for	14
— Screening of by use of smoke shell	16

N

Night advances, considerations	200 <i>et seq.</i>
Night attack—	
— General considerations	202 <i>et seq.</i>
— Instruction for men taking part	204
— Orders for, instructions on	205
Night, description of date in orders, &c., methods	224
„ marches, object of	198
Night operations—	
— Advance, rate of	201
— General considerations on	196 <i>et seq.</i>
— Secrecy, importance of	206
Night withdrawals, considerations	208
Numbers, pronunciation of in verbal messages	223

O**Objectives—**

— Advanced guard, selection of	145
— Allotment of in orders	56
— Battalion, action on gaining of	75
— Capture of. action after by infantry	97
— Close country, considerations	177
— „ „ selection of, important considerations	179
— Company, considerations in allotment of	78
— Explanation of to all ranks, importance of	61
— Final for battalion, fixing of	76
— Night attacks, limitations of	196
— Platoon, explanation of to all ranks	87
— Rear guard counter-attack, selection of	153
— Section : action when gained	93
— Town or village, to form a distinct	190

	PAGE
Oblique fire, value of	39
Observation duty by outposts, conduct of	158
" importance of in the defence	102
" of fire, use of observers for	41
Observation post—	
— Alternate positions, necessity for	121
— Forward slopes, duties of observers in	121
— Reverse slope positions, necessity for	115, 121
— Zone, protection for	108
Observers, duties at O.Ps. on forward slopes	121
Obstacles—	
— Anti-tank, natural, in siting infantry defence works	113
— Concealment of in standing crops	44
— Tank, natures of serious	26
— Topographical, anticipation of by commander	33
— Wire, gaps to be left in for passage of counter-attack	123
" siting of in defence: object of	113
Offensive action—	
— A.C. aeroplanes, important considerations	32
— Importance of and use	2
Officers' patrols, use of in night operations	207
Oil bottles, inspection of in the defence	133
Operation instructions, use of	217
" orders, detail, and sequence of	219
" " nature of	217
Orderlies, use of within the battalion	48
Orders—	
— Attack, allotment of objectives in	56
" points to be covered in	71
— Battalion for night attack, special points	205
" issue of for encounter attack	71
" to be written in battle	47
— Clearness, notes on	222
— Company, encounter attack, issue of	77
— Encounter attack, action by battalion commander on receipt of	59, 62
— Execution of, principles	222
— Field, classification of	217
— Issue of, instructions regarding	218

Orders—*contd.*

PAGE

— Issue of in mobile warfare	221
— Mobile warfare, issue of	47
— Night attack, explanation of to all ranks	204
— Operation, detail and sequence of	219
— Passing of	46 <i>et seq.</i>
— Platoon, issue of ; method and nature	85
— Special "Orders of the day," nature of	217
— Telegraphic form, method of preparation	47
— " " when issued and sequence for	221
— Verbal, issue of	48, 71
— Writing, rules for	223 <i>et seq.</i>
— Written, extra time spent on issue of always justified	61
Organized resistance, action against	57

Outposts—

— Artillery, tasks for	160
— Battalion on, instructions for commander	161
— Battle, nature of	173
— Commander of troops, problem to be solved by	160
— Company, details for	165 <i>et seq.</i>
— Composition of, factors affecting	156
— Defensive position, selection of general line	157
— Detachments to avoid useless collisions with enemy	164
— Dispositions, day and night, hour of change	163
— Duties of	157
— Information for, sources of supply	158
— Machine-gun defence. organization	160
— Observation duty, conduct of	158
— Patrols, composition and duties of	172
— Piquets and supports, degree of resistance by	167
— Position, occupation for one night, considerations	164
— " " occupation of, principles	158
— Protective detachments, for security, strength of	4
— Protection to a force halted, considerations	156 <i>et seq.</i>
— Role of by day, chief	164
— Task, execution of by battalion commander	162
— Traffic through, general considerations	171
— Troops, disposition of	159
— Use of in preparation of defensive position	103
— Withdrawal of	160, 161

P

	PAGE
Pack artillery, nature and ammunition carried	16
Patrolling, protection in darkness	129
Patrols—	
— Close country, use of in the attack	180
— Defence, by company in battalion reserve, use of	124
— " when attack is expected, use of in	118
— " use and importance of	102
— Equipment to be carried	127
— Failing to return, action to be taken	127
— Fighting, use, conduct and strength of	125
— " of in defence in woods	188
— " of to obtain identifications	98
— Formation for movement by day and night	126
— Leader, success dependent on	125
— Nature of, general considerations... ..	124
— Night marches, use of flanking	199
— " operations, action by if encountered	201
— Officers' use of in night operations	207
— Outpost, duties of	172
— " furnishing of and issue of orders to	167
— " hours for sending out	172
— " sending out before dawn	165
— " task of obtaining information	166
— " use of	158
— Prevention of enemy obtaining information from	127
— Reconnoitring, use, conduct and strength of	125
— Standing, nature and duty of	172
— Time of sending out to be varied	126
— Use of during reliefs in position warfare	137
— " in maintaining contact	84
— Warning regarding information if captured	127
Phases of battle—	
— Division of various	33
— Tactical formation adopted, governed by	33
Photographs, air—	
— Attack, necessity for careful study in the	42
— Information necessary for plan of attack, by	52

Photographs, air—contd,

PAGE

— Oblique, use of	31
— Study of to anticipate topographical obstacles	33
— Value of for night attacks	201

Piquet—

— Commander, action on receipt of orders	167
— Night marches, use of	199
— Number and strength of, factors affecting	165
— Outpost, nature and use of	159
— Posting of, selection of sites for	165

Plan—

— Attack, method of preparation	52
— Defence, basis of for battalion	110
— „ battalion ; important considerations	111 <i>et seq.</i>
— Fire, organization, defence, premature disclosure of	102

Platoon—

— Defence, considerations when in	127 <i>et seq.</i>
— Division of in attack	85
— Forward, action in the attack	82
— „ distribution of in deliberate attack	96
— „ replacement of to maintain momentum	82
— „ task of in the encounter attack	82
— Frontage, extent of	85
— Orders for attack, issue of, method and nature... ..	85
— Reserve, disposal of	86
— „ role of in supplying covering fire	87

Platoon commander—

— Aim of in the attack	88 <i>et seq.</i>
— Explanation of objective to all ranks, importance of	61
— Fire control, responsibilities	38
— Organization of defended locality by	127 <i>et seq.</i>
— Position of during attack	87
— „ of in attack and defence	46
— Reporting during attack, importance of	90
— Visits to section posts in defence	130

Position of assembly—

— Deliberate attack, selection of	94
— Night operations, considerations	199
— Selection of, consideration... ..	60

	PAGE
Position warfare—	
— Battalion in defence ; principles	109 <i>et seq.</i>
— Position, organization of	106
— Reliefs during, procedure	135 <i>et seq.</i>
Positions, fire ; duty in choice of	90
„ method of describing	225
Prisoners, particulars of information to be given	8
Programme—	
— Work, organization of platoon locality	129
— „ sequence of in defended position	109
Protection—	
— Aircraft, provision of	173
— General considerations	138 <i>et seq.</i>
— Defence, by patrolling	129
— Local, responsibility for	139
— Outposts, general considerations	156 <i>et seq.</i>
— Provision of for night operations	201
Protective detachments, use, strength and role of	4, 138 <i>et seq.</i>
„ duties, use of cavalry for	15

R

Raids, nature of and necessity for	97
Range—	
— Grenade, hand and rifle	10
— Rifle, detail of	9
Ranges—	
— Correct, every effort to be made to obtain	40
— Machine gun, definitions of	11
Rations and supplies in defence	130
Rear guard—	
— Action in close pursuit	150 <i>et seq.</i>
— Action, use of reserves in	154
— Command of, considerations	160
— Composition of, important considerations regarding	149
— Counter-attack by, necessity for and conduct of	153
— Dispositions when pursuit is not close	150
— Engagement by to be avoided	153
— Force advancing, composition of	156
— Necessity for	148

Rear guard—*contd.*

— Night marches, necessity for	...	...	...	199
— Positions in withdrawal, occupation of	...	...	...	151 <i>et seq.</i>
— Protective detachments for security, strength of	...	...	...	4
— Reports to be constantly sent in by commander	...	...	...	150
— Responsibility for protection, termination of	...	...	...	160
— Role of changing to outposts	...	...	...	160
— Strength and composition of	...	...	...	149

Reconnaissance—

— Advanced guard mounted troops, use of for	...	...	...	142
— Air, night, limitations to observers	...	...	...	31, 32
— Aircraft, A C. squadrons, duty in	...	...	...	27
— Assault bridging operations	...	...	...	238
— Attack, duty of during	...	...	...	74
— Close, aeroplane, identification of	...	...	...	27
— Close country, must be thorough	...	...	...	177
— Close country, to be detailed	...	...	...	179
— Contact, gaining of ; role of infantry	...	...	...	34
— Covering party for protection, during	...	...	...	110
— Night attack, to be thorough	...	...	...	201
— Night march, conduct of	...	...	...	198
— Night operations, success depending on	...	...	...	197
— Personal, battalion commander, conduct of	...	...	...	110
— Personal, commander, importance of	...	...	...	52, 53
— Personal, object of	...	...	...	33
— Personal, officers accompanying battalion commander	...	...	...	110
— Scouts, use of rifle when on	...	...	...	92
— Time, extra, spent in ; always justified	...	...	...	61
— Wooded country, difficulty of	...	...	...	187
Reconnoitring patrols, use, conduct and strength of	...	...	...	125
Refugees, passing outpost line, collection of	...	...	...	172

Reports—

— Battle, importance of rendering frequently	...	...	...	49
— Clearness, notes on	...	...	...	222
— Field, preparation of	...	...	...	226
— Information necessary for plan of attack	...	...	...	52
— Information, preparation of	...	...	...	228 <i>et seq.</i>
— Rear guard commander, sending in of	...	...	...	150
— Verbal, issue and delivery of	...	...	...	48
— Writing, rules for	...	...	...	223 <i>et seq.</i>

Reserve—		PAGE
— Ammunition, brigade, formation of		212
— Attack, importance of keeping in the		54
— Battalion, company in		81
— Battalion, composition of		62
— Battalion, deliberate attack; use of		96
— Battalion; formations to be adopted by a company in		81
— Battalion, important considerations on use of		74
— Battalion in attack, influence by commander through... ..		63
— Battalion, position of and movement by		67
— Battalion, reforming of		75
— Battalion, strength, control and use of		63, 64
— Battalion, task of in night operations		208
— Brigade, disposal of battalion in		115
— Counter-attack considerations by all units in		116
— Company, forward; control and use of		63, 83
— Defence, companies in, distribution of		122
— Defence, distribution of		105
— Platoon, disposal of		86
— Platoons in, position of in defence		122
— Platoon, role of in supplying covering fire		87
— Tank, necessity for		70
Reserves—		
— Close country, control of		177
— " " fighting, considerations		181
— Outpost, location and use of		159
— Placing or siting of in defence		109
— Rear guard action, use of		154
Resistance in attack, classification of types		56
Respirators—		
— Anti-gas, carrying of		129
— Wearing of by working parties		235
Reverse slope positions, provision for observation		115, 121
Rifle—		
— Fire, against aircraft		173
— Grenade, range of		10
— General		8
— Inspection of in the defence		133
— Use of by scouts when on reconnaissance		92

Rifle—*contd.*

	PAGE
— Use of, conditions for effective	37
River banks, method of describing	225
Roads, concealment of movement on	176
Routine orders, nature of	219

S

Sanitation in defence, to receive careful attention	133
--	-----

Scouts—

— Employment of, when necessary	86
— Night operations, action by if encountered	201
— Section, employment of : necessity for	91, 92
— Working of ; method	92

Secrecy—

— Night operations, importance of	206
— „ withdrawals, supreme importance of	208

Section—

— Attack, conduct of in	90 <i>et seq.</i>
— Fire unit of infantry	38

Section commander—

— Aim of in the attack	88 <i>et seq.</i>
— Defence ; duty in event of attack	134
— Duties in attack	90
— Explanation of objective by, to men ; importance of	61
— Fire control, responsibilities and duties	38
— Position of in attack and defence	46
— Procedure by in occupation of a post	130 <i>et seq.</i>
— Security, responsibility for	91
— Weapons, use of, responsibility in attack	87

Section post—

— Construction of, considerations	132
— Occupation of in defence, procedure	130
— Security of in defence	132
— Sentries in, duties and positions of	132
— Visits of platoon commander in defence	130

Sectors—

— Use of by other units in advance	67
— Division of defensive position in	37
— Allotment of in defence	108

Security—	PAGE
— Approach march to position of assembly; steps for ...	60
— Measures during occupation of a defensive position ...	110
— „ to guard against, surprise, responsibility for...	138
— Provision for by protective detachments ...	4
— „ of; means for ...	3
— Section commander, responsibility for ...	91
— „ post in defence ...	132
— Surprise, measures to be taken for, duty in ...	3
— Wooded country, during reconnaissance of ...	187
Semaphore, use of from ground to air signalling ...	31
Semi-organized resistance, action against ...	57
Sentries—	
— Action by on approach of a person or party ...	132, 170
— Bayonets, fixing of ...	169
— Concealment of, considerations ...	169
— Defence, posting of by day and night ...	129
— Information regarding patrols to be given ...	126
— „ required by, in defence ...	132
— „ to be in possession of ...	170
— Position and duty on in section posts in defence ...	132
— Selection of posts for ...	169
Sentry group—	
— Commanders, instructions in event of attack ...	170
— Establishment and duty of ...	166
— Numbers to be established ...	167
— Strength of, and posting ...	169
Sentry post, distance of from piquet ...	169
Shadows, value of for concealment ...	175
Shelters, not allowed for forward platoons in defence ...	129
Sketches, preparation of for information ...	228
Smoke—	
— Attack, method of dealing with ...	51
— Communication in, when enemy uses ...	51
— Grenade, range and duration of screen ...	10
— Grenades, limitations to use ...	50
— Screen, important considerations ...	50
— Shell fired by artillery, use ...	49
— „ use of ...	16
— Use of in war ...	49

	PAGE
Smoke—<i>contd.</i>	
— Use of to assist tanks	26
Smoke or lights in view of the enemy, care to be taken	133
Snipers' positions, to be specially selected	122
Soldier, action by if touch is lost with his section	93
„ in action, not permitted to leave his section... ..	93
Standing crops value of as cover	44
„ orders, nature of	217
„ patrol, nature and duty of	172
Stars, direction by in night marches	198
Sunken roads, value of as cover	44
Supplies and rations in defence	130
„ dropping of from aeroplanes	32
Support—	
— Artillery, importance of and duty of commanders in	20
— Fire, importance of in the attack... ..	2
— Machine-gun, method of organizing	13
Supports—	
— Commander of unit in, action on receipt of orders	167
— Outpost, disposition of	166
— „ nature, use and role of	159
Surprise—	
— Advantage and importance of in war	3
— Attack, advantage of in the	53
— Close country, easy to obtain	178
— Defence, importance of	101 <i>et seq.</i>
— „ means of securing ; importance of	121
— Effect on the defence ; value of	2
— Fire, method of effecting	39
— Ground ; the skilful use of assisting	41
— Night operations, success depending on	197
— Security measures against, duty in	3
— „ „ responsibility for	138
— Smoke, use of for	49
Surrender by enemy, to lay down arms first	8

T

Tactics—	
— Infantry, bedrock of	18
— „ unit on which all are based	84

Tactics—contd.

	PAGE
— Influence of close country on	177
Tactical formations, responsibility for adoption of	32

Tanks—

— Advanced guard, order of march when allotted	144
— Allotment of to defence, role of	117
— Attachment of lowest unit for	26
— Command of, when co-operating with	26
— Co-operation with in the encounter attack	69 <i>et seq.</i>
— Deliberate attack, to be followed closely on to the objective	96
— Employment of in battle	25 <i>et seq.</i>
— „ „ in attack, considerations	69 <i>et seq.</i>
— „ „ „ town and villages	191
— Enemy, importance of information regarding	52
— Flag signal, nature and use of	26
— Formation of, in the attack	70
— Light; armament and capabilities of	26
— Obstacles, serious, nature of	26
— Protection afforded by other arms; duty in	25
— Rear guard, in counter-attack by	153
— Wood fighting, co-operation with	186

Tapes—

— Assault bridging operations, use of in	240
— Night operations, use of	205
— Use of in daylight at forming-up position	95

Tasks—

— Advanced guards, carrying out of	140, 144
— Artillery support, determined by commander of troops	21
— Forward platoons, in the encounter attack	82
— Infantry, allotment of in the attack	57
— Outposts, execution of by battalion commander	162
Telephone conversation not secret	227
Time, method of describing in orders, &c.	223
„ „ necessity for in organization of defence	99
Traffic control, assault bridges, arrangements for	242
„ „ through the outposts	171
Training, discipline, the bedrock of	5
Transport, vanguard, movement of	143
Trees, value of as cover	43

Trenches—

	PAGE
— Clearing of from above ground	97
— Defended localities, provision of	123
— Defensive position, mobile warfare, digging of	106
— Dummy, construction and use of... ..	101, 106, 128

U

Undulating ground, cover afforded by	43
Unit—	
— Basis for infantry tactics	84
— Fire, commander, responsibilities... ..	38
— Fire, infantry	38
Unorganized resistance, action against... ..	56

V

Vanguard, composition and duties of	143
Verbal messages, issue and delivery of... ..	48
Verbal orders—	
— Form to be adopted when issuing	71
— Issue of for encounter attack	71
Verbal reports—	
— Issue and delivery	48
— Considerations, preparation and delivery	227
— Very light signals	28, 29
Villages—	
— Attack on, conduct of	190 <i>et seq.</i>
— Defence of, considerations and conduct of	193 <i>et seq.</i>
— Fighting in, important considerations	182 <i>et seq.</i>
Visibility from the air	174 <i>et seq.</i>

W

Walls, value of as cover	44
War—	
— Aim in, ultimate military	1
— Surprise in: advantage and importance of	3
Weapons—	
— Anti-tank, employment of pack artillery	17
— Automatic, power conferred on the defence	2
— Effective use of in defence, chief aim of	100

Weapons—*contd.*

	PAGE
— Infantry, general	8 <i>et seq.</i>
— Use of in attack; responsibility of commanders	87

Wire—

— Cutting gaps in, deliberate attack	95
— „ use of field artillery for	17
— Entanglements, responsibility for siting and construction of	25
— Obstacles, provision of gaps in	123

Withdrawal—

— Bridges, demolition of, arrangement for... ..	155
— Circumstances which necessitate a	148
— Control during, important considerations	155
— Machine guns, use of in	154
— Obstacles in defence, object in siting	113
— Platoon from defended locality	130
— Rear guard, conduct of	148 <i>et seq.</i>
— Troops outflanked or turned; no justification for	7

Woods—

— Attack on, conduct of	183 <i>et seq.</i>
— Concealment in, danger of using	175
— Cover afforded by, degree of	175
— Defence in, conduct of	187 <i>et seq.</i>
— Fighting in, important considerations	182 <i>et seq.</i>
— Gas bombardment, period untenable	175, 182
— Tanks, co-operation with in fighting in	186

Working parties—

— Arms and equipment, disposal of... ..	235
— Attack on, action by	232
— Demand for and distribution of	232
— Equipment, wearing of	129
— Filing on to the work, methods	233 <i>et seq.</i>
— Officer in command, responsibility	231
— Respirators, wearing of	235
— Tasks, allotment of... ..	235

Z**Zone—**

— Forward or covering, detail of organization	106
— Main, detail of	107
— Observation posts, protection for... ..	108

Printed under the authority of HIS MAJESTY'S STATIONERY OFFICE
by Harrison and Sons, Ltd., 44-47, St. Martin's Lane, W.C.2.

(s 27/125)q Wt. 15315—1028 100,000 3/26 H & S, Ltd. Gp. 27
26/Ptg/1244



SUITABLE BATTLE FORMATIONS F

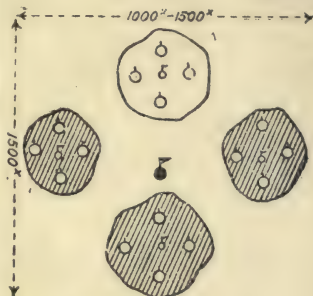


FIG. 1 (*Diamond*).

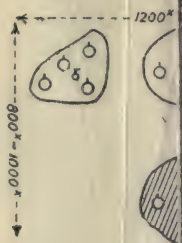


FIG. 2

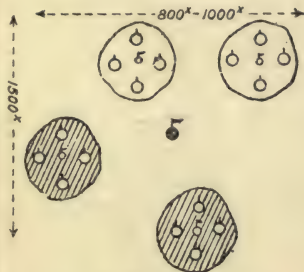
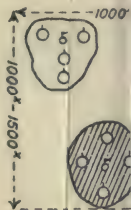


FIG. 4 (*Square*).



FIG

PLATE I.

A BATTALION IN THE EARLY STAGES OF THE ATTACK. (GRAMMATIC ONLY)

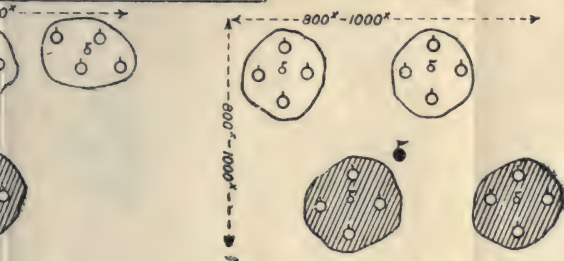







FIG. 3 (Square).

KEY.

-  = Platoon.
-  = Company H.Q.
-  = Battalion H.Q.
-  = Forward Companies.
-  = Battalion Reserve.

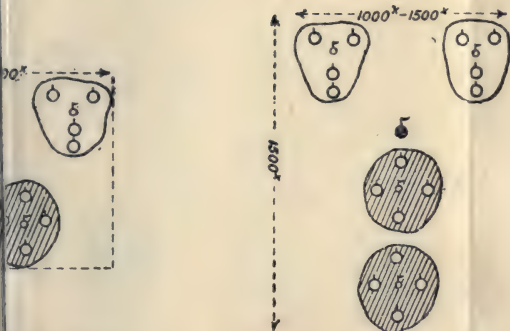


FIG. 6. (Square)

SUITABLE BATTLE FORMATIONS

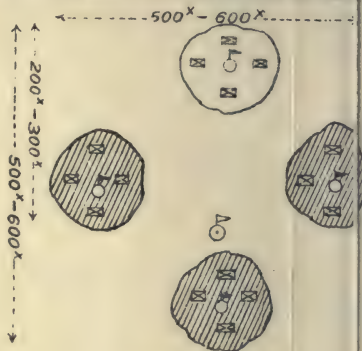


FIG. 1. (Diamond)

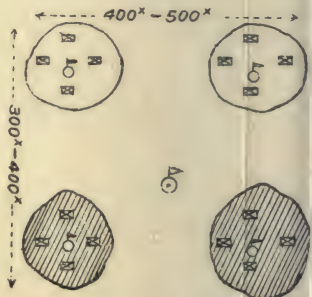


FIG. 3. (Square)

PLATE II.

OR A COMPANY IN THE EARLY STAGES OF THE ATTACK.
(DIAGRAMMATIC ONLY)

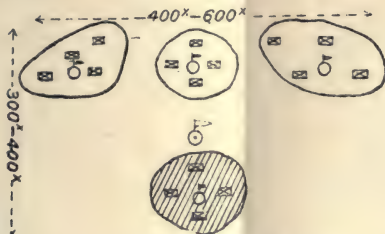


FIG. 2. (Triangle)

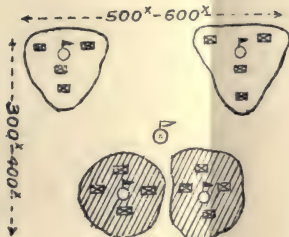


FIG. 4. (Square)

KEY.



Section.



Platoon H.Q.



Company H.Q.



Forward Platoons.



Company Reserve..

SUITABLE BATTLE FORMATIONS FO

FIG. 1 (*Diamond*).

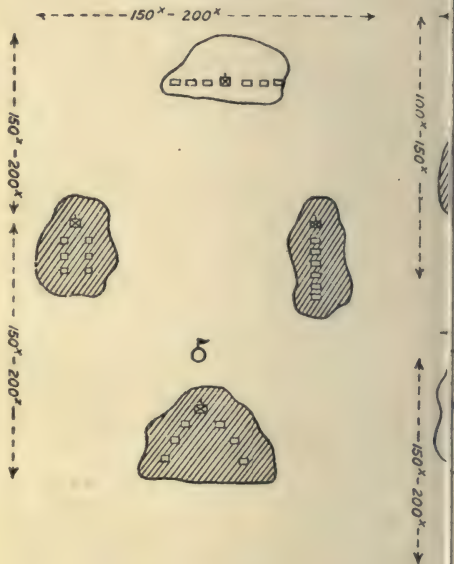


PLATE III.

A PLATOON IN THE EARLY STAGES OF THE ATTACK. DIAGRAMMATIC ONLY)

FIG. 2 (Square).

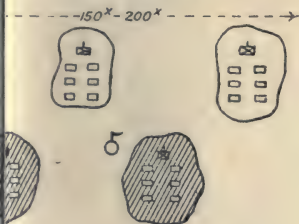


FIG. 3 (Square).

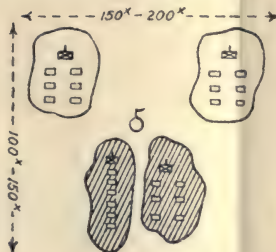
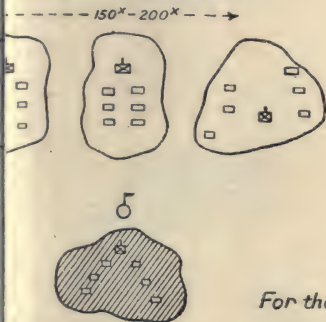


FIG. 4 (Triangle).



KEY.

- Other ranks.
- ⊠ Section commander.
- Platoon H.Q.
- ⊞ Forward sections.
- ⬤ Platoon reserve.

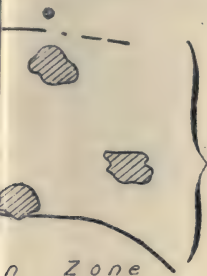
For the employment of "Scouts" see Sec. 16, 3.

ORGANIZATION OF A DEFENSIVE (DIAGRAMMATIC)



SITUATION IN MOBILE WARFARE.
(ONLY)

*Advanced troops or
Rear guard fighting
a delaying action to
gain time.*

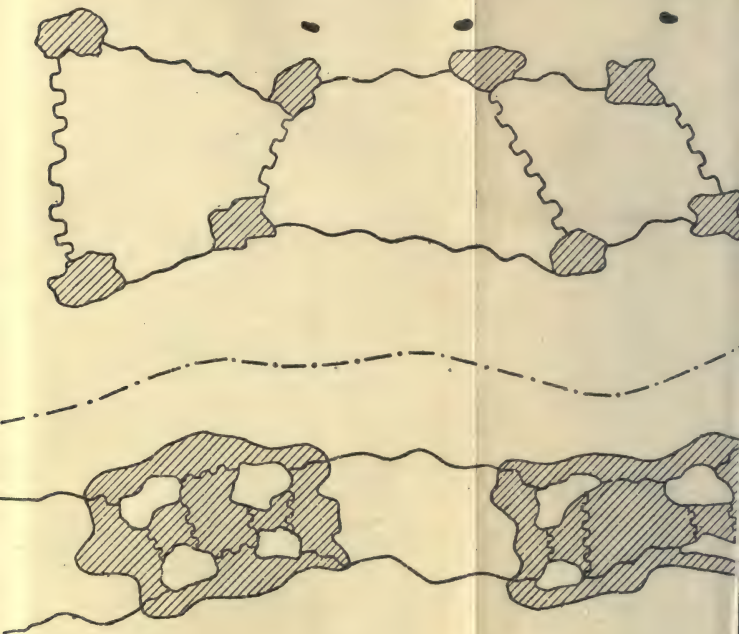


*Battalion sectors
organized in
defended localities.*



DEVELOPMENT OF POSITIONS SHOWN
WHEN CONDITIONS OF POSITION WARE

(DIAGRAMMATIC ONLY)



IN PLATE IV,
ART. SUPERVENE.

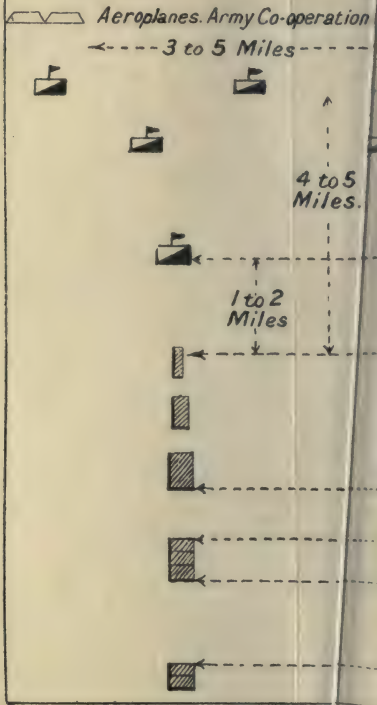


*Forward or covering zone,
including Forward Artillery
Observation Posts*



*Main zone which must
include Artillery Observation
Posts*


DISTRIBUTION OF ADV MOVING ON ONE (THEORETIC




ADVANCED GUARD

ON ONE ROAD.

(Tactical.)

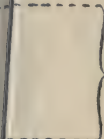
Operation Squadron R.A.F. 

----->

 } *Advanced Guard
Mounted Troops.*

to 5
miles.

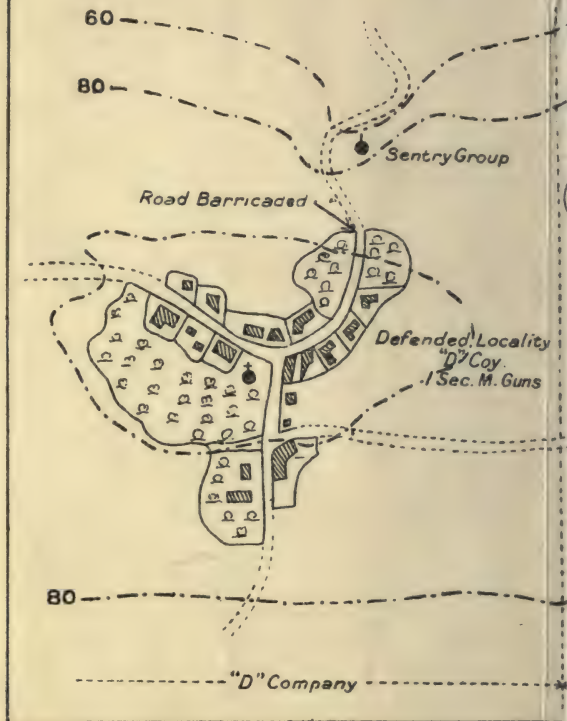
-----> *Detachment Adv. Gd.
Mtd. Troops operating
with Vanguard.*

 } *Leading detachment
of Vanguard.*

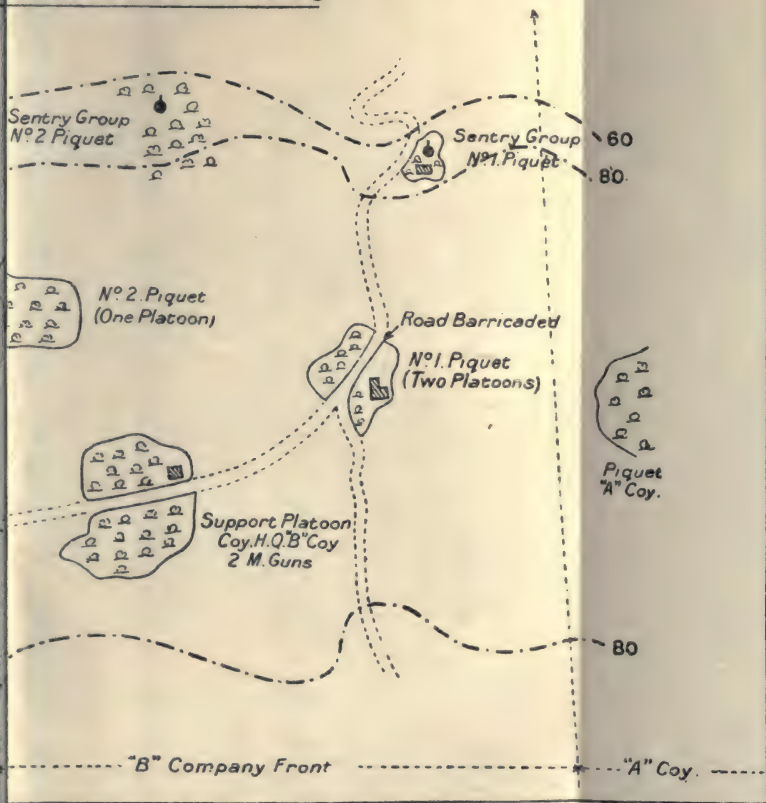
----- } *Main Body of Vanguard
including Light Artillery
and Detachment of
Engineers. (If required.)*

----- *Head of Main Guard.*

DISTRIBUTION



OF OUTPOST COMPANIES







GLYN, MILLS & Co.

(Established 1753).

Registered with unlimited liability 1885.

incorporating

Child & Co. and **Holt & Co.**

(Established before 1600)

(Established 1809)

BANKERS.

Official Army and Air Force Agents.

NAVY & PRIZE AGENTS.

Managing Partners:

LORD WOLVERTON.

LAURENCE CURRIE.

LORD HILLINGDON.

General The Hon. Sir H. A. LAWRENCE, G.C.B.

Brigadier-General A. MAXWELL, C.B., C.M.G., D.S.O.

ERIC GORE BROWNE, D.S.O.

FREDERICK WILLIAM FANE.

THE Bank which is represented by
AGENTS and CORRESPONDENTS in
all the principal Cities and Towns of the
United Kingdom and throughout the
World, conducts every description of
Banking business, both British and
Foreign.

Letters of Credit issued.

Home and Foreign Credits established.

Executorieships and Trusteeships undertaken.

Head Office : 67, LOMBARD STREET, E.C.3.

Childs Branch : 1, FLEET STREET, E.C.4.

Holts Branch : 3 & 4, WHITEHALL PLACE, S.W.1.

MILITARY BOOKS

Published by



Authority.

LONDON:

PRINTED UNDER THE AUTHORITY OF HIS MAJESTY'S STATIONERY OFFICE.

To be purchased directly from H.M. STATIONERY OFFICE at the following addresses
Adastral House, Kingsway, London, W.C. 2: 38, Abingdon Street, London, S.W. 1:
York Street Manchester: 1, St. Andrew's Crescent, Cardiff:
or 126, George Street, Edinburgh;
or through any Bookseller.

Unless otherwise stated, books in the following list are obtainable by Officers, Non-Commissioned Officers and Men (in the manner prescribed by paragraph 649 of the Regulations for the Allowances of the Army 1924), at a discount of 25 per cent. off the prices quoted, postage being an additional charge (odd farthings should be counted as halfpennies). Applications should be made on Army Form L.1372, and addressed to the Under-Secretary of State, The War Office, S.W.1.

Abyssinia. Expedition to. 2 Vols. and Maps. 1870. Half Morocco, £5 5s., Cloth £4 4s.

Accounts. Army. See FINANCIAL INSTRUCTIONS.

Africa. Notes on the Geology of the Continent of. 3s.

Air Survey Committee. Report No. 1. 1923. 4s. 6d. Additional Bibliography. 2d.

Aldershot Command. Standing Orders for. 1925. 5s.

Allowances. Army. Regulations. Jan. 1924. 1s. 6d. Amendment. Feb. 1924. 1d. Dec. 1924. See also FIELD ALLOWANCE, PAY OF OFFICERS, and SEPARATION ALLOWANCE.

Amharic Language. Short Manual of the. With Vocabulary. 1910. 5s.

- Ammunition for Q.F. 4.5-in. Howitzer.** Notes on. 4th Edition, 1920. (With Diagrams.) 1s.
- Animal Management.** 1923. Prepared in the Veterinary Department of the War Office. (Cloth.) 2s.
- Anti-Aircraft Defence.** (Part I. Ground Units.) Manual of. 1922 (Provisional). 1s.
- Armoured Car Training.** Training and War (Provisional) 1921. 1s. 6d.
Do. Amendments. Feb. 1923. 2d.
- Armourers.** Instructions for:—
Care, repair, browning, &c., of small arms, Machine Guns, "Parapet" Carriages, and for the care of Bicycles. 1912. (Reprinted, with Amendments, 1916.) 2s. 6d.
Addendum, Jan. 1918. Care and repair of Rifles, Magazine, .303-inch Pattern 1914. 1d.
Do. Aug. 1921. 1d.
- Army Entrance Regulations.** *See* ENTRANCE.
- Army Fire Service Regulations, 1924.** 2d.
- Army List. Monthly.** Officers on the Active List. (*Publication was suspended during the War*):—
Jan. 1919 and after. Each 5s.
Quarterly Supplement. Dec. 1921 to June 1922. Each 4s.
Half-yearly Supplement. Dec. 1922. 6s.
Do. June 1924. 5s.
Do. Dec. 1924. 5s.
Do. June 1925. 5s.
- Army List. Half-Yearly.** (*Not issued in October 1914.*) Each 15s.
Do. Supplement. Jan. 1925. 7s. 6d.
- Army Orders.** Monthly. Each 3d.
Do. Index for 1924. 6d.
- Army Orders.** Covers for. 9d.
- Army Review.** Quarterly. July 1911 to Oct. 1914. (Vol. I, Nos. 1 and 2, *out of print.*) 1s. (Up to July 1914, 1s.; Oct. 1914, 11d.)
(*Subsequent publication suspended.*)
- Army Service Corps.** *See* SERVICE.
- Artificers. Military. Handbook.** 10th Edition. 1915. 9d.
- Artillery at the Picardy Manœuvres in 1910.** Translated from the French. 2s. 6d.
- Artillery. Royal:—**
Instructions for Practice. Garrison (Coast Artillery) Seawards. June 1922. 3d.
Light, Medium and Heavy. Instructions for Practice. March 1924. 3d.
Rangefinders. *See that item.*
Standing Orders for:—
Lt.-Colonel's Command R.G.A. (Coast and Siege). 1d.
Complete list can be obtained on application to H.M. Stationery Office.

OVER TWO FULL BATTALIONS

of men who, in the years of the war probably studied the pages of "Infantry Training" are now unable to read a word in print. They are blind—blinded in fighting for King and Empire.

But, by the aid of St. Dunstan's, they have been made happy and useful citizens again and are winning new laurels every day for the gallant way they have conquered their handicap.

Their service comrades can help in many ways to raise funds for St. Dunstan's to continue its work. Address for all information :—The Treasurer of

ST. DUNSTAN'S

(Registered under the Blind Persons Act, 1920).

Headquarters :—Inner Circle, Regent's Park,
London, N.W.1.

BRITISH LEGION

Patron—H.R.H. THE PRINCE OF WALES.
President—FIELD-MARSHALL EARL HAIG.

The National Organisation for Ex-Service Men and Women of all ranks and ratings of the NAVY, ARMY AND AIR FORCE.

All who have served in any of the above should join their local Branch and become members of this magnificent organisation, which, while maintaining the comradeship of the services, stands for justice for those who have served, and their dependents, and for the care of the widows and orphans of the fallen.

ALL RANKS NOW SERVING are invited to become members of the Legion on the termination of their service and to send in their names to Headquarters or to the local Branch at their place of residence, prior to actually leaving the Colours.

“ BRITISH LEGION ” JOURNAL.

A monthly review of ex-service activities, with articles specially written by well-known writers of the day.

2d. monthly, or 2s. 6d. a year, post free

APPEALS DEPARTMENT.

Donations and subscriptions for the purpose of alleviating distress amongst those who have served, their dependents, and the widows and orphans of the fallen, should be sent to

Organising Secretary,

EARL HAIG'S BRITISH LEGION APPEAL.

Further particulars on all Legion matters may be obtained from

Colonel E. C. HEATH, D.S.O., Gen. Sec.,

Headquarters : 26, ECCLESTON SQUARE, LONDON, S.W.1.

Telephone : VICTORIA 9620.

ALFRED HAYS,

**74, CORNHILL, E.C.
AVENUE 3300.**

**26, OLD BOND ST., W.
REGENT 3400.**

THEATRE TICKETS

**TICKETS FOR ALL SPORTS
MEETINGS.**

SOLE AGENT: RUGBY UNION, NAVY v ARMY,
OXFORD v CAMBRIDGE,
No. 1 COURT, WIMBLEDON &
HURLINGHAM.

**INTERNATIONAL AND
RICHMOND HORSE SHOWS.
ROYAL TOURNAMENT.**

GRAMOPHONES and RECORDS

HIS MASTER'S VOICE,

COLUMBIA,

VOCALION,

ZONOPHONE.



**LATEST CATALOGUES OF MACHINES and
RECORDS SENT TO ANY PART of the WORLD.**

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

UD
234
A57
1926
v.2

Great Britain. War Office
Infantry training

PA Sci

